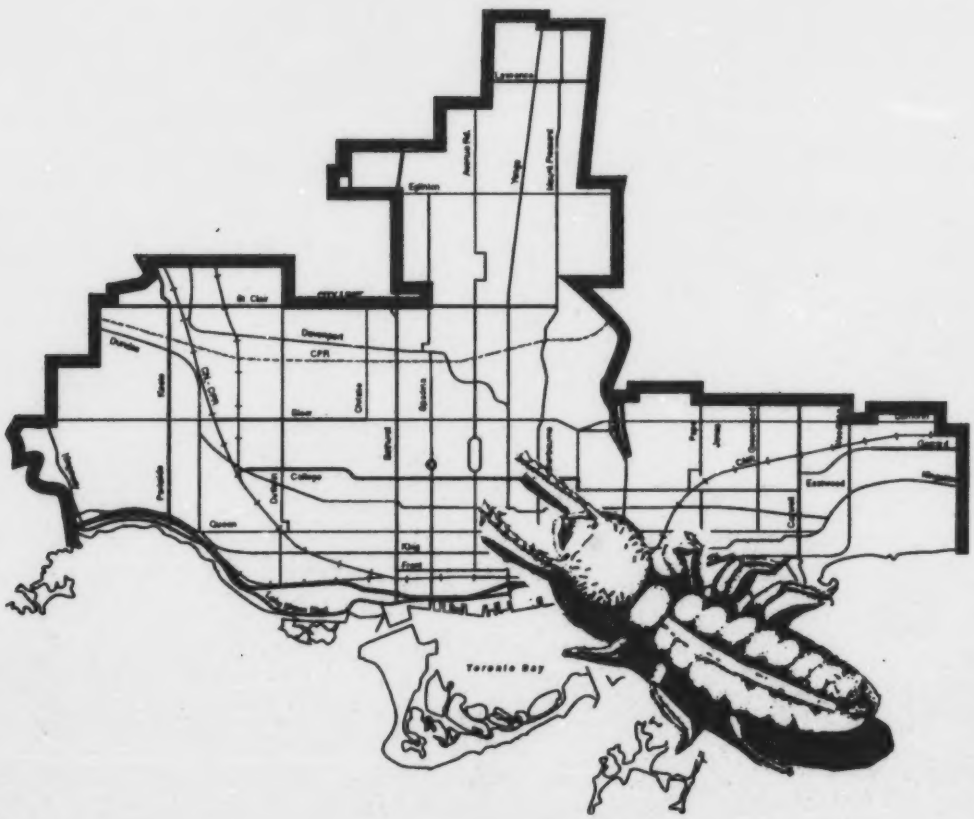
1991

termite report

Termite and Carpenter Ant Control



City of Toronto Housing Department

ERRATUM:

Page 3, in the first paragraph, the second sentence should read:

"That study, along with a concise version highlighting its findings in the form of Research Bulletin 21 (entitled **The Edible City**), was submitted to City Council through its Neighbourhoods Committee in June 1983."

A new paragraph should start:

"The 1983 study outlined the history of the termite problem and dealt with the nature of the insect and the geographic distribution and intensity of infestation in the City of Toronto to the end of 1982."

The rest of the paragraph continues as written.

TERMITE REPORT 1991

Termite and Carpenter Ant Control

Prepared By
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City of Toronto Housing Department

92-03620/

SPECIAL THANKS TO:

Dr. Timothy G. Myles, Project Director Urban Entomology, Faculty of Forestry, University of Toronto, whose contribution to the Sections on the description of termites, concerns about the use of pesticides and the Termite Research Project is greatly appreciated.

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* *Information Resource Officer, Housing Department, (telephone: 392-1264) to order copies of this report.*

Foreword

This report provides a statistical summarization of the termite situation and control activities in Toronto. The continuing and growing severity of the termite problem is reflected in the fact that the City has compiled and issued such annual reports since 1983.

The information provided here demonstrates the importance of the Urban Entomology Program established in 1987 at the University of Toronto. This is the only research program on termite control in Canada and the only program devoted to control of the eastern subterranean termite anywhere in the world. This mission-oriented, applied research is geared toward the development of new environmentally safe technologies which will provide benefits to housing on a national scale as well as environmental benefits to urban ecosystems in many other countries. To date, the program has been an unqualified success and is on the right track to developing effective, environmentally-friendly alternatives to the chemical barrier method.

The City of Toronto Termite Control Program and the University of Toronto Urban Entomology Program have enjoyed a mutually beneficial relationship for many years. The Housing Department and in particular Mr. Anwar Jafri are to be commended for compiling this excellent series of reports.

J. Rod Carrow
Dean of Forestry
University of Toronto

Foreword by Dr. J. Rod Carrow
Dean of Forestry - University of Toronto

Contents

Summary 1

Introduction 3

Section 1: Termite Control 5

- What Are Termites? 5
- Termite Diversity And Distribution In Canada 6
- Treatment Effective But Termites Can Move Onto Unprotected Properties 7
- Properties Treated Under Grants Program And Independently 7
- Termite Treatment Grants 7
- The Province Terminates Funding 10
- Six Percent Of Houses In The City Of Toronto Affected By Termites 12
- Serious Implications To Funding Cuts 15
- Termites Recorded In Sixteen Percent Of City Blocks 16
- Potential Danger To One In Five Houses In The City 18
- Pesticides Cause Environmental And Health Concerns 20
- Termite Research Project 20
- Current Research Goals 21
- Renewed Funding Necessary For Research 24
- Description Of Sectors Relative To The Former And The Current City Wards 33

Section 2: Carpenter Ant Control 36

- Carpenter Ants Not As Serious A Threat As Termites 36
- Carpenter Ant Control Grants Solely Funded By The City 36

Maps:

1. World Distribution Of Subterranean Termites In The Genus *Reticulitermes* 26
2. The Northern Distribution Of Subterranean Termites In North America 27
3. Distribution Of *Reticulitermes* In Southern Ontario 28
4. Termite Distribution - Toronto Region - 1949 29
5. Termite Distribution - Metropolitan Toronto - 1962 30
6. City Of Toronto Termite Infestations As Reflected In The Number Of Houses Treated Or Approved For Treatment By Ward, To 1990 31
7. City Of Toronto - Termite Growth And Distribution - December 1990 32
8. City Of Toronto, Areas Which Are Subjected To Carpenter Ant Infestation In One Or More Properties, December 1990 39

Appendices: Termite Control Statistics

- Explanatory Notes to Appendices 40

1. Houses Treated/Approved For Treatment Under The Termite Control Program By Period, Sector And Ward 41
2. Houses Treated Against Termites Independently By Owners By Period, Sector And Ward 42
3. Total Houses Treated Under Termite Control Program And Independently By Owners By Period, Sector And Ward 43
4. Distribution Of Total Blocks Newly Affected By Termites Where Properties Treated Under Termite Control Program And Independent Categories By Period, Sector And Ward 44
5. Distribution Of Blocks Newly Affected By Termites Where Properties Exclusively Treated Independently By Period, Sector And Ward 45
6. Total Blocks And Blocks Affected By Termites By Sector And Ward, 1990 46
7. Total House-Form Dwelling Stock, Houses Treated/Approved For Treatment And Stock Located Within Blocks Affected By Termites By Ward And Area, 1990 47
8. Inventory Of New City Of Toronto Blocks Subjected To Termite Infestation By Year And Size Of House-Form Dwelling Stock, 1990 49

Summary

- The purpose of this document is to report the extent of termite and carpenter ant infestations and their control in the City of Toronto.
- Termites were discovered for the first time in Toronto in 1938, but significant property damage caused by them was not noticed until the early 1960s.
- Between 1965 and 1990 termite infestation affected over 6500 housing units, mostly in house-form dwellings. This accounts for six percent of house-form dwellings in Toronto.
- As a simple method of showing the spread of infestation, the number of City blocks where properties have been affected by termites are reported each year. To the end of 1990, a total of 490 blocks were affected and accounted for 16 percent of blocks in the City.
- The affected blocks contain about 27,000 or 24 percent of houses in the City. This means almost every fourth house in Toronto is located in an infested area.
- A large majority (over 88%) of infested properties were treated under the City of Toronto's Termite Control program compared with only 12% treated independently by property owners.
- The cost of treating termite infestation in the City over the last seven years (1984-90) is estimated as $6.1 million. On average, this translates into expenditures totalling about $900,000 annually.
- Over the same period, grants to property owners from the City and Province amounted to about $2.7 million and the balance (about $3.4 million) was borne by the home owners themselves. This does not take into account additional costs which the home owners had to bear beyond the cost of chemical treatment and wood-soil separation which were not eligible for termite control grants.
- In 1990, the average cost to a property owner of chemical treatment and that of wood-soil separation work was $935 and $3,177 respectively, while the average provincial grant was $544 and $1,235 respectively.
- In October 1989 the Ministry of the Environment announced the termination of provincial grants for termite control. As a result, significantly fewer home owners apply to the City for assistance. As this is the primary method of identifying new infestations, the termination of the provincial program has also severely reduced the City's ability to track the termite problem.
- The East End has the most serious problem and accounts for:
  - 78 percent of the house-form dwellings approved for treatment throughout the city between 1965 and 1990;
  - 75 percent of the blocks affected by termite infestation in one or more properties; and
  - 73 percent of the house-form dwellings located within the infested blocks, in Toronto.

- Within the East End:
  - fifteen percent of the house-form dwellings in the area have been affected by termite infestation;
  - almost one out of two (47%) blocks in the area were subjected to termite infestation; and
  - more than one in two house-form dwellings (58%) in the area are located within affected blocks.
- In the meantime, infestation has also been moving into sections of the Central City, more particularly in Wards 4 and 5.
- The statistics presented in this report mostly reflect the instances of infestation which came to the City's notice on a reactive basis and likely understate the actual extent of the termite problem.
- The traditional treatment with pesticides has been successful in eradicating termites from an infested property, but treatment does not necessarily prevent termites from attacking untreated properties since termites can safely thrive in almost impossible to detect colonies.
- Traditional pesticides used in Ontario for termite control caused public health and environmental concerns and their use has either been suspended or banned in several States in the U.S.A. In 1989 the City prohibited their use in favour of other alternatives as a condition of eligibility for termite treatment grants.
- The special termite research program established in January 1987, at the Faculty of Forestry, University of Toronto, on the initiative of the City of Toronto, aims at developing an integrated termite control program.
- The program is focusing on developing safe, effective and environmentally compatible methods of termite detection and control that would reduce the use of pesticides. The program is faced with a shortage of funds and needs financial assistance.
- Carpenter ant infestation, which generally occurs in more wide spread locations, has been recorded or treated between 1966 and 1990 in 374 properties located in 283 City blocks.
- In 1990, 12 properties were approved for treatment of carpenter ant infestation at an average cost to a home owner of $267 and the average City grant of $67. In 1990, 12 new City blocks were added to the list of blocks where carpenter ants have so far been recorded.

Introduction

Introduction

The 1983 Study

In May 1983 the City of Toronto Planning and Development Department, in co-operation with the City's Buildings and Inspections Department, published a comprehensive study under the title - **A Review and Evaluation of Toronto's Termite Control Program**. That study, along with a concise version highlighting its findings in the form of Research Bulletin 21 (entitled **The Edible City**), was submitted to HP LaserJet Series IIHPLASEII.PRS geographic distribution and intensity of infestation in the City of Toronto to the end of 1982. It also traced the evolution of the City's termite control program and evaluated its operation in terms of effectiveness, including effectiveness of chemical and physical methods of prevention and treatment. It included a review and discussion of the relevant legislation, pointed out the areas where action was required and made recommendations for dealing more effectively with the problem. The study also included information on the carpenter ant infestation and treatment program. Although carpenter ant infestation is not eligible for provincial grants, the City of Toronto provides grants for treatment from its own financial resources.

The statistics quoted in the study published in 1983 were for the period up to about the end of 1982. Because of the manner in which records were maintained in the past, separation of statistics on termite and carpenter ant infestation was not possible until 1983. Therefore, the statistics up to 1982 for the East-End and Central City Sectors might have included a (small) number of carpenter ant cases. As no active termite infestation has come to the City's notice in the West and North Sectors since the introduction of termite control program in 1965, past statistics for those areas, reported in the 1983 study, can be assumed to relate exclusively to carpenter ants. However, from 1983 onwards, separate statistics for termite and carpenter ant infestation for all parts of the City are being maintained.

The Termite Report Series

The present report is the sixth in the annual **Termite Report** series. The series, begun originally in 1985 at the City's Planning and Development Department, was published under the title "Termite Monitor". Following reorganization of the Planning and Development, Housing, and Buildings and Inspections Departments in 1988, the responsibility for termite control, along with the production of the annual report on the subject, was assigned to the Housing Department, which published the report for the first time in 1989. Because of the situation created by the termination of funding by the Ontario Ministry of the Environment, very few grants for treatment of termite infestation were approved in 1989, therefore no annual report was published in 1990.

The purpose of the report is to keep the City Council as well as the Provincial Government informed on the spread and seriousness of termite infestation and the progress of Termite-Control Program in Toronto.

The report is also of interest to property owners, real estate professionals and other concerned groups and individuals.

The two significant features of the 1991 report are:

(1) The geographic data are based on the current 16 municipal Wards as reconstituted in November 1988, replacing the former 11 Wards. A description of the relationship of the former wards with the current ones appears on page 33.

(2) Inclusion for statistical purposes of all residential properties affected by termites whether such properties were treated under the City's and Provincial Grants program or independently by their owners. The Ontario Ministry of the Environment furnished the historical data on independently treated properties. Because of the termination of funding of Provincial grants of up to $2,000 in 1989, treatments in most cases would now likely be carried out independently except where the owners still chose to apply for the City of Toronto grants of up to $125.

Section 1

Termite Control

Termite Control

What Are Termites?

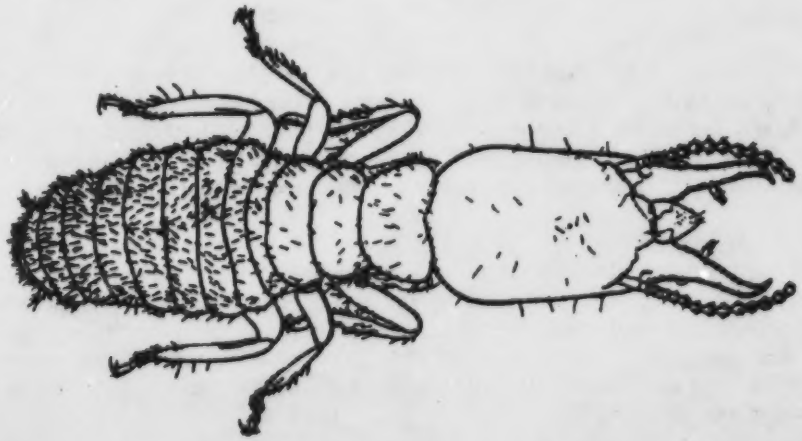
Termites are wood-eating, social insects. The eastern subterranean termite is the most common species in southern Ontario. The most numerous form of the subterranean termite, the workers, are similar in size, shape and colour to grains of white rice.

Termites live in large colonies. Populations of subterranean termite colonies in Ontario have been estimated from 720,000 to 4,500,000 individuals. The foraging territories of single colonies have been estimated from 285 to 1,730 square meters. The maximum linear extent of foraging territories has been measured at up to 77 meters. Thus, in urban residential areas, a single colony will usually search for wood to eat over several adjoining properties.

Termites have a thin, soft exoskeleton (outer skin) and will readily dry out and die in less than 24 hours if exposed to dry conditions. They therefore prefer damp soil. Except for brief flights to establish new colonies, termites spend their entire lives within their gallery (tunnel) system which is either in wood or in the soil. Consequently they are rarely seen. While entering and feeding on the inside of wood, termites may leave the surface shell of the wood intact. Their presence, therefore, may not be discovered before considerable damage has already occurred. The most common evidence of subterranean termites are the earth tubes that they build for shelter between the ground and the source of wood on basement and foundation walls. The shelter tubes are about 1 cm in width.

Figure 1

Soldier Caste of Eastern Subterranean Termite, *Reticulitermes flavipes*



Individuals in a colony can develop into different forms or "castes." The larvae which emerge from the eggs will eventually differentiate into nymphs, soldiers, workers, or primary or secondary reproductive forms. Most of the colony is comprised of workers, who build the tunnels and provide the food for the colony. About two percent become soldiers with long jaws used for defense (Figure 1). Nymphs develop wing pads and can mature to become winged alates, a primary reproductive form, or mature into a wingless secondary reproductive form. Some workers also may develop into the secondary reproductive form.

New colonies start in two basic ways. Once a year for a period of a month or so (April-May in the Toronto area) the winged alates are present and may fly out of the colony to disperse. After a short flight, male-female pairs (king and queen) form and start new colonies. A second way that colonies can form is by "budding off". When a colony becomes sufficiently large, or part of it becomes separated from the main colony, secondary reproductive forms develop and start a new centre of reproduction. This may also occur if wood or soil is transported to a new location infested with as few as 15-40 workers or nymphs.

Termite Diversity And Distribution In Canada

All insects in the world can be grouped in about 30 "orders" of insects. Termites comprise one entire order called the Isoptera. Worldwide there are about 2,400 described species of termites, which can be grouped in six main "families". Most termites are confined to the warm tropics. However, species representing three of the six main families of termites are found in Canada.

Subterranean Termites: Records dating from the early 1900s suggest that subterranean termites are probably native to certain confined areas in southern Ontario and British Columbia. In southern Ontario the eastern subterranean termite, *Reticulitermes flavipes*, appears to be native to the southern-most extremity of Canada on Pelee Island, Point Pelee National Park and the southern lake shore of Essex County. In British Columbia subterranean termites appear to be native to southeastern parts of Vancouver Island, and inland along the Fraser, Thompson and Okanagan River valleys. Termite monitoring in southern Ontario indicates that termites have spread to about 30 municipalities (Map 3).

Dry-wood termites: At this time there are only four known cases of dry-wood termites in Canada. The three cases in Ontario all came to light within the past few years. This suggests that the true extent of their occurrence has been under-reported and that more cases may exist. One of these cases, involving the western dry-wood termite, *Incisitermes minor*, occurred in an east side Toronto home, which was fumigated in September 1990. This termite colony is now considered to be eradicated. A new case involving the West Indian powderpost termite, *Cryptotermes brevis*, was recently discovered in Mississauga. This species is considered the most destructive of all dry-wood termites.

The biology and control of dry-wood termites is completely different from subterranean termites. Dry-wood termites are usually recognized by the presence of sand-like fecal pellets which the termites expel from their galleries. Control consists of either injecting pesticides into the infested timbers or fumigation of the structure. At this time dry-wood termites are not a significant problem. However if the known infestations are not eradicated these termites could spread and become a major new pest problem.

Rotten-wood Termites: These termites are native to British Columbia and occur as far north as Prince Rupert and Queen Charlotte Island. Their damage is usually confined to damp and partially rotten wood. Control consists of correcting the moisture problem and replacement of infested timbers.

Treatment Effective But Termites Can Move Onto Unprotected Properties

Termites can cause serious damage to homes or other buildings where wooden structural members are used. For years now, they have been spreading slowly but surely across the City and adjacent municipalities. Through treatment it is possible to prevent only further damage to treated properties. Yet, treatment does not prevent termites, which can thrive safely in their almost inaccessible colonies, from attacking any untreated properties. Each year new cases of infestation are discovered and new neighbourhoods are affected in the City.

Properties Treated Under Grants Program And Independently

In the past annual reports, data on termite infestation were limited to residential properties treated under the Provincial and the City of Toronto Termite Control Grants Program. With the availability of historical data going back to 1965 from the Ontario Ministry of the Environment, the 1991 report for the first time includes statistics on not only the properties the owners of which had applied for and received provincial and municipal grants from the City of Toronto, but properties treated independently by owners who neither applied for nor received any government financial assistance. Data on properties treated independently is available because pest control operators are required to report treatments to the Ministry of the Environment, as a condition of their licences.

The independently treated properties included 361 social housing units, mostly in low-rise apartment-buildings in the North and South-Regent Park areas, managed by the (Provincial) Metropolitan Toronto Housing Authority. They also included a small number (27) of non-residential properties located within infested areas, and another 34 residential properties located in areas where termite infestation has not been confirmed. Properties in both of these categories are not included in this statistical analysis, which focuses only on residential dwellings located in areas of known termite infestations.

Of the total 6533 houses treated or approved for treatment to the end of 1990, 5776 or 88% were treated (or approved) under the grants program and those treated independently (or approved for treatment) accounted for 757 or 12%. With the termination of funding by the Province in 1989, most houses will now be treated independently.

Termite Treatment Grants

Until 1989 a home owner could take advantage of the provincial grants available through the City of Toronto for treatment of termite infestation. The grants were approved by the City, and largely funded by the Ontario Ministry of the Environment. After May 1984, the City both approved and distributed the grants. They could cover 60 percent of the combined cost of the work, including chemical treatment and wood-soil separation, not exceeding $2,000. A grant which could cover 60 percent of the cost of chemical treatment not exceeding $1,000, was also available to property owners for the pre-treatment of land on which a house was to be built for the owner's residence. City of Toronto Termite Control By-law No. 189-73, as amended (by By-law No. 488-82), requires pre-treatment of house sites where wooden structural members are used in buildings.

The termite control program is advertised to home owners through a wide variety of means, including municipal councillors, community newspapers and radio programs, and through brochures in libraries and home improvement stores.

Table 1.1 provides an account of termite treatment grants given out to the applicants from 1983 to 1990 from the funds provided by the Province and the City of Toronto.

Table 1.1
Termite Control Grants Approved

Year	Provincial Grants: Chemical Treatment #	Provincial Grants: Chemical Treatment $	Provincial Grants: Wood-Soil Separation #	Provincial Grants: Wood-Soil Separation $	Total Prov. Grants $	City Grants for Chemical Treatment #	City Grants for Chemical Treatment $	Total Grants $
1983	246	69,846	187	145,129	214,975	260	28,457	243,432
1984	470*	149,014	247	247,314	396,328	484*	58,931	455,259
1985	365	122,709	247	299,957	422,662	365	44,860	467,522
1986	374*	181,277	269	280,065	461,342	377*	46,822	508,164
1987	404	216,337	294	325,980	542,317	404	50,446	592,763
1988	433	230,080	317	349,218	579,298	433	53,984	633,282
1989	5	2,520	3	5,764	8,284	5	625	8,909
1990	41	22,298	29	35,806	59,104	41	5,250	64,354

* *The significant difference in the number of provincial and city grants in 1984 was accounted for by the applicants who were content with the City grants and did not want to wait until the resumption of provincial grants which remained suspended in most of 1983 and earlier months of 1984. The difference between the number of provincial and City (chemical) grants in 1986 is accounted for by two rooming houses and one house treated with nematodes not eligible for provincial grants.*

Table 1.2 provides figures on average costs and average provincial grants for chemical treatment and wood-soil separation work and the City grants from 1983 to 1990. Compared with 1988, the average cost of wood-soil separation work for 1989 and 1990 shows an increase of over 30%. The higher average resulted mainly from a much smaller number of houses and a larger proportion of cases (42%) where the actual cost was significantly higher than the average, ranging as high as $15,650. Note that the home owner remains responsible for at least 40% of the actual cost.

Table 1.2
Average Cost and Average Termite Control Grant

Year	Average Cost		Average Prov. Grant		Houses Requiring Wood-Soil Separation	Average Municipal Grant
	Chemical Treatment $	Wood-Soil Separation $	Chemical Treatment $	Wood-Soil Separation $	%	$
1984	531	2,187	317	1,061	53	122
1985	562	2,645	366	1,214	67	123
1986	813	2,099	485	1,041	71	124
1987	898	2,654	535	1,116	72	125
1988	903	2,369	531	1,101	73	125
1989	935 *	3,134 *	504 **	1,455 **	73 *	125
1990	934 *	3,177 *	544 **	1,235 **	73 *	125

* *Based on the combined total number of properties approved for grants or already treated in expectation of being approved and reimbursed.*

** *Based only on the number of approved grants.*

The Province Terminates Funding

Prior to 1984, provincial grants were approved on the City's recommendation and were funded and distributed directly by the Ministry of the Environment. Under a revised agreement in 1984, the Province continued funding but delegated the approval and distribution of grants to the City. This arrangement continued until October 1989, when the Province terminated its funding of the grants program.

In spite of frequent requests to the Ministry of the Environment for timely and sufficient funding, the accumulated shortfall between the funds received and the grants approved had already grown to $382,174 by December 31, 1988. The City had to exceed commitments over funds in order to avoid delays in approving applications, on the premise that the province would honour pre-commitments. With the approval of $8,284 in grants in February 1989, the shortfall rose to $390,458 and further approvals had to be suspended. In the meantime new applications were still being received.

The Province provided no funds in 1989 until October 23, 1989 when the City received from the Ministry of the Environment a cheque for $403,000. At the same time the Minister advised the City, this was the last year that funds for grants would be provided by his Ministry. Most of the money ($403,000) received was required to pay the City for its advances. The small remaining balance would permit the City to approve only a fraction of the applications received in 1989 before the termination of funds was announced.

For lack of funds, the City approved in 1989 only 5 provincial grants amounting to $8,284.

In 1990 the City approved 41 provincial grants amounting to $59,104 (Table 1.1) of which $48,306 would be provided from the unused Provincial funds resulting from cancellation of previously approved grants, and the difference of $10,798, from the new funds received from the Province on October 23, 1989. As of December 31, 1990, the City had a small balance of $1,744 in the provincial grant fund.

On November 14, 1989 the City Housing Department informed those who had already applied for provincial grants, of the termination of funding by the Province and recognized, for administrative reasons, November 24, 1989 as the cut-off date for such applications.

However, the department had already received 155 applications prior to the cut-off date which qualified for provincial grants amounting to about $228,000. In most of these cases the treatment work had already been completed in expectation of funding. The City therefore requested the Provincial Minister of Housing to provide the City $228,000 through a "one time" only withdrawal from the Ontario Home Renewal Program (OHRP) Revolving Fund to reimburse the outstanding applications. This request was denied.

Table 1.3 is an account of the provincial grants approved and the funds received from the Ministry of the Environment by the City for chemical treatment and wood-soil separation since May 1984.

Table 1.3

Grants and Provincial Funding Since 1984

Year	Grants Approved $	Grants Cancelled[1] $	Net Grants Approved $	Prov Funds Received $	Shortfall or Excess of Funds Over Grants $
	53,045[2]				
	396,328				
1984	449,373		449,373	366,457	(82,916)
1985	422,666	28,296	394,370	595,382	201,012
1986	461,342		461,342	325,200	(136,142)
1987	542,317		542,317	300,000	(242,317)
1988	579,298	71,887	507,411	385,600	(121,811)
1989	8,284		8,284	403,000	394,716
1990	59,104	48,306	10,798		10,798
TOTAL	**2,522,384**	**148,489**	**2,373,895**	**2,375,639**	**1,744**

1 Because applicants failed to utilise grants.

2 Grants approved in 1983 for which there was a shortfall of provincial funds.

The cancellation of financial assistance to home owners will most likely be a significant setback to termite treatment, especially for low-income home owners.

The City's own grant of a maximum of $125 will continue to be available to all eligible applicants including those whose applications were received after the cut-off date of November 24, 1989. In addition, a small number of applicants may be able to proceed with termite treatment under three home repair loan programs: the Residential Rehabilitation Assistance Program (RRAP); the Ontario Home Renewal Program (OHRP); and the City of Toronto (Home Repair) Loan Program, administered by the City's Housing Department. However, these programs are only available to very low income households.

Six Percent Of Houses In The City Of Toronto Affected By Termites

The extent of termite infestation in the City may be measured in several ways. The houses treated or approved for treatment indicate known infestations. The blocks in which infested houses occur indicate generally the areas at risk of infestation. The houses in such blocks are at risk of infestation. Termites can thrive in, and migrate from, inaccessible colonies in the soil. Because treatment cannot prevent termites from attacking untreated properties, we measure the termite problem by the potential for infestation, as well as by known infestations.

The following analyses examine the extent of termite infestation in the City of Toronto by these three indicators. The data are broken down into the two geographic sectors in which infestations are known: the east end, and the central city. A geographic description of the sectors appears on page 33. Data are also broken down by ward, to indicate the distribution in more detail.

Between 1965 and 1990, termite infestation had been discovered or treated in 6,533 houses within the City. They accounted for:

- 6% of the City's entire stock of 116,319 house-form dwellings;
- 11% of the East End and the Central City sectors' stock of 61,962 house-form dwellings, and
- 23% of the stock of 26,798 house-form dwellings located within the termite infested sections of the Central City and the East-End of Toronto (Appendix 7).

Although infestation has not yet spread to the West-End and the North-Toronto sectors, (Wards 1, 2, 15 and 16, a section of Ward 3 and major sections of Wards 11, 12, 13 and 14), termites pose a potentially serious danger to house-form dwellings throughout the City. In the last seven years (1984-90), chemical treatment and wood-soil separation have cost the property owners, the City and the provincial government, about $6.1 million. This does not take into account additional costs to the home owners which are beyond the cost of chemical treatment and wood-soil separation and are not eligible for termite control grants, such as damage to areas not in contact with the soil.

More than three out of every four infested houses were located in the East End sector. However, infestation has also been moving steadily into certain sections of the Central City sector (Appendix 3 and Maps 6 and 7).

Wards 8 and 9 accounted for the largest share (47%) of the houses treated, as the following breakdown in descending order indicates:

Percent of Total Properties Treated in Each Ward Having Known Infestations:

Ward	%
8	29
9	18
7	17
10	14
5	10
4	7
11-14*	2
3*	1
6	1

* *Only those sections of Wards 11-14 and 3 which are located within the Central City sector.*

Table 1.4 and Figure 2 illustrate the incidence of infestation in terms of the number of houses treated or approved for treatment, broken down by the East End and the Central City. Map 6 shows the incidence by each ward.

Table 1.4

Houses Treated or Approved for Treatment by Period and Sector[1]

Period	East End Sector[2]		Central City Sector[2]		Total
	#	%[3]	#	%[3]	#
1965-80	2,157	77	654[4]	23	2,811
1981	291	84	57	16	348
1982	326	68	156	32	482
1983	163	55	135	45	298
1984	717	86	119	14	836
1985	329	81	78	19	407
1986	318	80	80	20	398
1987	374	91	39	9	413
1988	385	84	74	16	459
1989	29	72	11	28	40
1990	35	85	6	15	41
TOTAL	**5,124**	**78**	**1,409**	**22**	**6,533**

1 Houses may not necessarily be treated within the calendar year in which treatment was approved.

2 Based on Appendix 3. A description of these sectors relative to the former and the current City wards appears on page 33 in this report.

3 Percent of all treated houses in the period indicated.

4 Including 424 houses in Kensington area treated not under the Termite Control Program but under the Neighbourhood Improvement Program from 1976 to 1978.

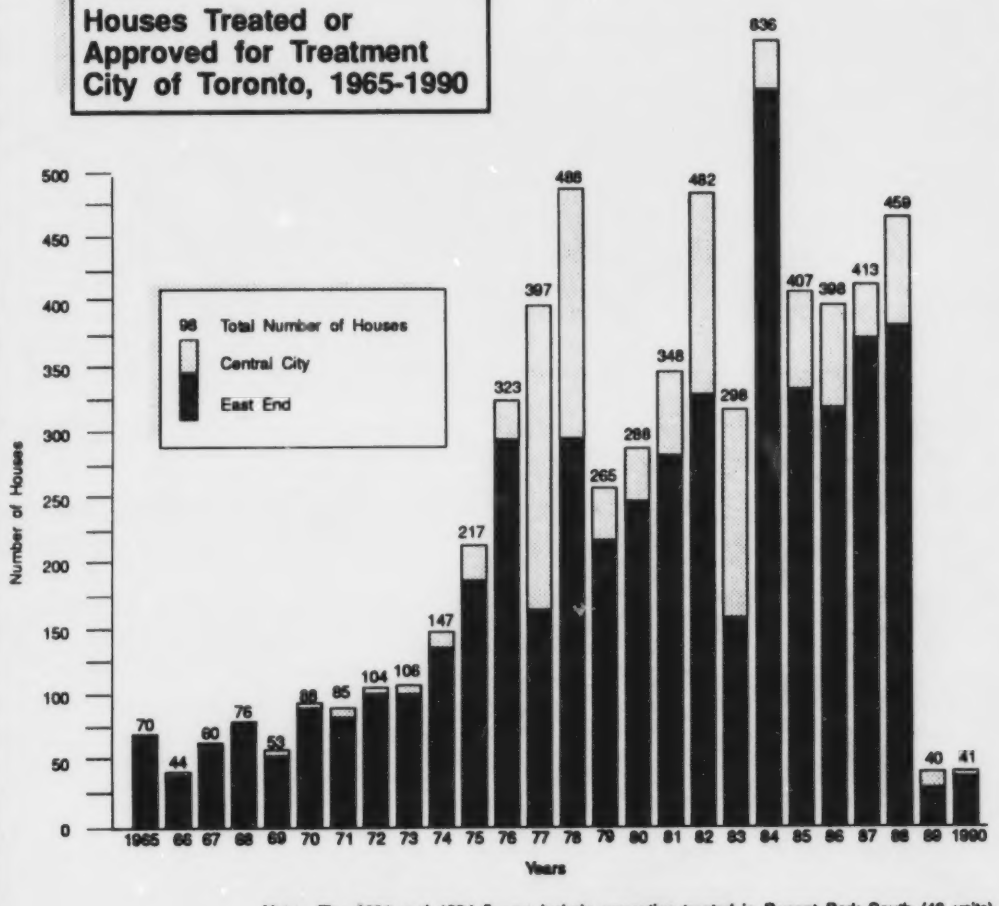
The houses treated or approved for treatment between 1965 and 1990, accounted for 15 and 5 percent respectively of the total house-form dwellings located in the East End and Central City (Appendix 3).

As independently treated houses, (historical data on which became available only recently) accounted for only a small fraction of the total houses treated annually, incidence of termite infestation had been measured in terms of number of houses approved by the City each year for treatment under the Termite Control Grants Program and in terms of the new blocks where those houses were located.

Tables 1.4 and 1.5 and Figures 2 and 3 show a dramatic drop in 1989 and 1990 in the number of houses treated or approved for treatment as well as in the number of newly infested blocks. This drop in treatment is primarily due to the cancellation of provincial funding for termite control.

Figure 2

Houses Treated or Approved for Treatment City of Toronto, 1965-1990



Note: The 1981 and 1984 figures include properties treated in Regent Park South (46 units) and Regent Park North - (305 units) and scattered units in wards 8, 9 and 10.

Serious Implications To Funding Cuts

The major effects of the funding cuts are as follows:

- Because of lack of funds and the uncertain situation created by and since the cancellation in 1989 of provincial funding by the Ministry of the Environment, the City's approval process remained almost suspended during 1989 and 1990.

- With the small amount of provincial funds available after meeting the commitments of 1988, the City was able to approve only 5 houses in 1989 and 41 in 1990 for treatment.

- For administrative reasons, the City traditionally followed the practice of approving both the provincial and municipal grants simultaneously. Because of suspension of provincial grants, municipal grants also remained suspended in 1989 and 1990, while efforts continued unsuccessfully to obtain provincial funds from the Ontario Ministry of Housing.

- The City's primary method of detecting and tracking new infestations is through home owners asking for assistance. Adjacent properties to the ones identified that way are also examined for infestation. As is evident from the 1989 and 1990 data, the loss of provincial grants means far fewer home owners will call in, weakening the City's ability to track and control termite infestations. The newly available data from the Ministry of the Environment on independently treated houses may help fill that gap. However, the grants are an inducement to treatment which may not be undertaken without financial assistance, even if properties are infested.

At the time of writing (June 1991) no data were available on independently treated houses for 1990. This information will be included in the next report. The actual incidence of termite infestation in 1989 and 1990 therefore may not be reflected in the data in this report.

The statistics do not take into account many houses treated by their owners in 1989 and 1990 in anticipation of being reimbursed if and when funds were available. All of these owners had applied for grants; the majority of them (155) had applied before the cut-off date for provincial grants and could not afford to wait indefinitely. The houses in question will be included in statistics as and when they are approved for City of Toronto grants.

In addition to the five houses approved for grants, 35 houses were treated independently in 1989.

Between 1966 and 1990, 651 sites were pre-treated (mostly independently) as a measure of precaution before construction. They are not included in the statistical analysis as no infested houses were involved.

The provincial grants were a significant incentive to home owners -- particularly those with low incomes -- to have their homes treated. Their cancellation in October 1989 caused a dramatic drop in the number of enquiries and applications (for treatment) to the City. Compared with the preceding two years of 1987 and 1988, when the approved applications alone amounted to 887, the total number of enquiries and applications in the two years of 1989 and 1990 dropped down to about 350. While cancellation of provincial grants will most likely discourage many low-income home owners, it is too early to assess its full impact. At this stage it is hoped most home owners will still try to protect their properties with their own financial resources and with the help of the small City grants.

Termites Recorded In Sixteen Percent Of The City Blocks

Another way of looking at the seriousness of the termite problem is to examine it in terms of the number of City blocks where infestation has already affected one or more properties and is most likely to spread to others in the future. As of the end of 1990, of the 3,065 blocks in Toronto, infestation has been documented in 490 or about 16 percent of blocks. Of these, 149 were found infested before 1965. The affected blocks account for 29 percent of the 1,685 blocks within the combined sectors of the East End and the Central City (Appendix 6). Three out of four affected blocks in the City are located in the East End. The ratio of blocks affected by termite infestation, of total blocks, was 47 percent in the East End and 14 percent in the Central City.

Percent of Total Affected Blocks Found in Each Ward:

The percent of the total affected blocks was the highest in the East End Wards 8, 9, 10 and 7 (Appendices 4 and 6) followed by the others in descending order:

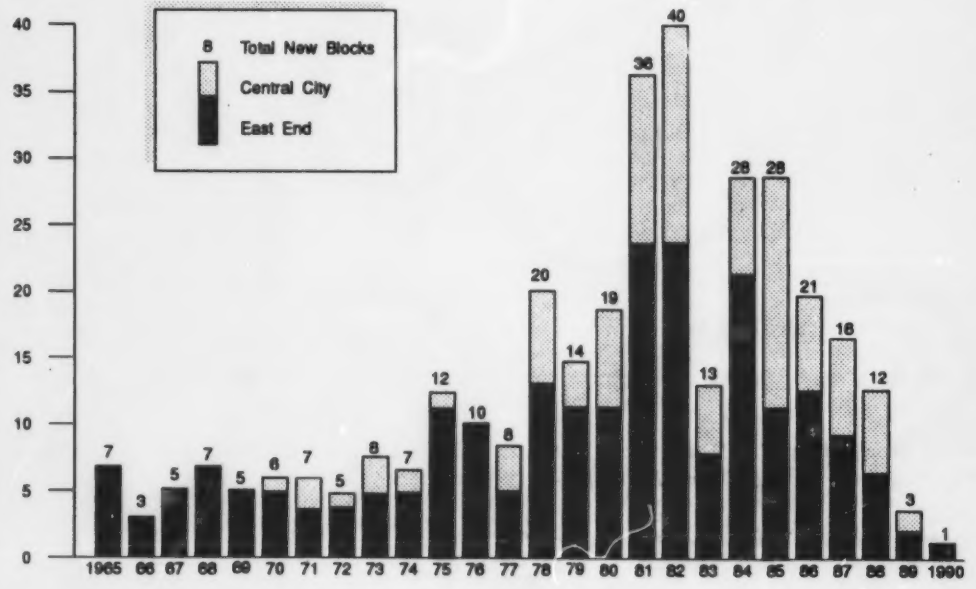
Ward	%
8	50
9	49
10	46
7	42
4	21
5	14
11-14*	14
3*	12
6	9

* *Only those sections of Wards 11-14 and 3 which are located in the Central City sector*

Maps 4, 5, 6 and 7 show the growth and distribution of termites from 1949 to 1990. Figure 3 and Table 1.5 illustrate the spread of infestation in terms of number of blocks where infestation had been discovered to the end of 1990. As noted above, the actual incidence of infestation may be higher than is reflected here for 1989 and 1990.

Figure 3

Annual Termite Infestation - New City Blocks 1965-1990



Note: The 1981 and 1984 figures include 2 blocks in the Regent Park Social Housing Project

Table 1.5
Distribution of Blocks
Affected by Termite Infestation by Year and Sector

Cumulative Number of Blocks

Year	East End[1]		Central City[1]		Total
	#	%[2]	#	%[2]	#
1965	145	93	11	7	156
1970	170	93	12	7	182
1975	199	90	22	10	221
1980	246	84	46	16	292
1985	335	77	102	3	437
1986	347	76	111	24	458
1987	356	75	118	25	474
1988	363	75	123	25	486
1989	365	75	124	25	489
1990	366	75	124	25	490

1 Based on Appendix 4. A description of these sectors, relative to the former and the current City Wards appears on page 33 in this report.

2 Percent of all affected blocks in the period indicated.

Potential Danger To Almost One In Four Houses In The City

The third way of measuring the potential extent of the termite problem is by the number of houses within affected blocks. Presently 26,798 or 23 percent of the City's existing house-form dwellings are located within the 490 blocks where one or more houses have been infested. The affected blocks are confined to the East End and the Central City sectors and account for 43 percent of the 61,962 house-form dwellings located within those areas (Appendix 7). The situation is very serious in the East End where the ratio of house-form dwellings located within affected blocks is 58 percent, compared with 25 percent in the Central City sectors.

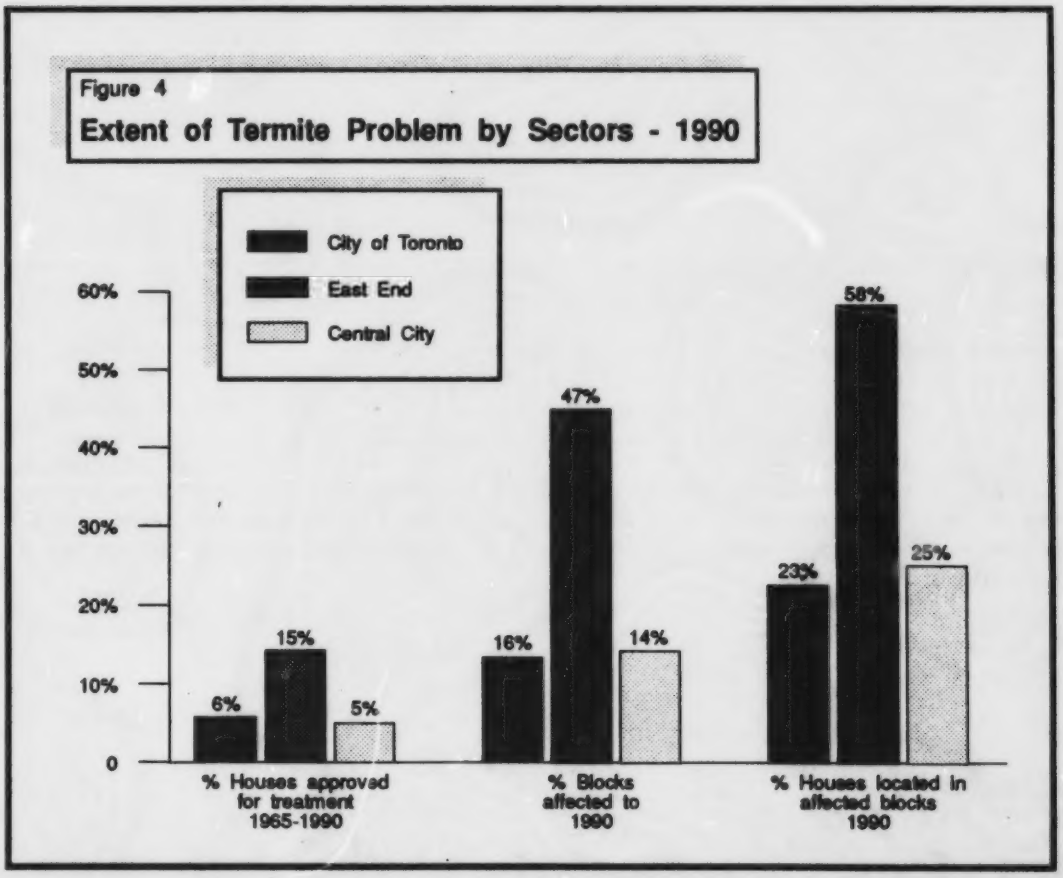
Percent of All House-form Dwellings in Each Ward that are In Affected Blocks:

Wards 7 and 8 rank at the top:

Ward	%
7	73
8	65
9	54
10	54
4	34
5	31
11-14*	24
3*	15
6	12

* *Only those sections of Wards 11-14 and 3 which are located within the Central City Sector.*

Figure 4 illustrates the extent of the termite problem relative to the City of Toronto as a whole, the East End and the Central City Sectors.



Please note that the preceding data includes only the instances of infestation which came to the City's notice on a reactive basis. Though this data is likely reflective of the actual extent of the termite problem (except 1989 and 1990 data), it likely understates the problem.

Pesticides Cause Environmental And Health Concerns

In these times of enlightened environmental awareness, the continued use of long-lasting insecticides applied to soil surrounding homes is a major concern. The amount and concentration of toxic material used to create the chemical barrier in the soil is several orders of magnitude greater than what is used in most pesticide applications in agriculture and forestry. Although soil termiticides protect the housing stock, they contribute considerably to the increased chemical load in our environment. Concern over long-term exposure and possible chronic health effects caused by indoor vapours and organochlorine termiticides: chlordane, aldrin, and dieldrin led to a virtual ban on these materials in 1987. In 1989 the Ministry of the Environment issued a policy statement urging municipalities to use chlorpyrifos as the termiticide product of choice. Chlorpyrifos is an organophosphate insecticide and registered under the tradename Dursban TC. Termite control companies are still permitted to use up existing stocks of organochlorines, but only for exterior perimeter applications. However, the City of Toronto does not approve grants when these chemicals are used. Several other termiticide compounds are registered in the U.S. (pyrethroids) and some of the manufacturers are currently seeking Canadian registration.

In order to minimise the use of insecticides in general, City Council adopted on January 8, 1990 more strict criteria which the inspectors should apply in determining evidence of active infestation. The evidence required is the actual presence of termites and subsequent restoration of broken shelter tubes.

Termite Research Project

The danger to property posed by termites, on the one hand, and the potential problems associated with the use of pesticides on the other, point out the need for new approaches. To address the growing termite problem, the Urban Entomology Program was established at the initiative of the City of Toronto in 1987 within the Faculty of Forestry at the University of Toronto. The program was founded with a wide base of support from municipal, provincial and federal sources reflecting broad inter-agency concern. The program was under the direction of Dr. J. Kenneth Grace from 1987 to 1990. Under Dr. Grace's direction, the program made excellent progress toward the development of an integrated pest management approach to control of the eastern subterranean termite. Over twenty research articles were published covering diverse aspects of the problem including trapping and marking techniques, trail pheromone, foraging behaviour, termite-fungus relationships, and toxicity studies. In 1990 Dr. Grace moved to assume a new position at the University of Hawaii.

Current Research Goals

Dr. Timothy G. Myles began as the new director of the program in July 1990. Under Dr. Myle's direction the program nas entered a new phase. Current research is focusing on approaches which seem likely to lead to feasible new technologies for termite control. The three principle areas of research activity are: 1) Development of a Trap-Treat-Release technique for killing or dramatically suppressing subterranean termite colonies. 2) Development of sand barriers and other physical methods for excluding termites from houses and for containing infested areas. 3) Investigating the use of heat and other novel methods of controlling dry-wood termites.

Trap-Treat-Release Technique: At the present time there is no environmentally acceptable and economically feasible way of killing subterranean termite colonies. The aim of the Trap-Treat-Release technique is to develop such a method of annihilating whole colonies. The research team has demonstrated that as many as half a million termites can be trapped within a three-week period. Work continues to better understand how to aggregate termite populations to improve trapping efficiency. Trapped termites are then subjected to various treatments which have two effects 1) the treatment has a delayed lethal effect and 2) the lethal effect is transmissible either by grooming, food exchange or secondary spread of insect disease pathogens in the colony. After treatment the termites are released and disperse back into the colony spreading the lethal effect of the treatment and killing the whole population throughout the diffuse subterranean tunnel system. Various types of treatment continue to be investigated including small doses of slow-acting stomach poisons, insect growth regulators, nematodes, fungi, and physical treatments such as exposure to ultraviolet light. Several candidate materials and modes of treatment are showing promise. Demonstration trials under simulated field conditions will begin soon. If successful this technique will benefit the urban environment in many countries throughout the world. This method could revolutionize the multibillion dollar termite control industry and generate economic dividends for Canada.

Coarse Sand Barrier Method: Another innovative approach which has recently become commercially successful in Australia and Hawaii is the use of coarse sand as a physical barrier to replace the chemical pesticide barrier. Termite foragers can not penetrate a layer of sand in which particle sizes range between 1.4 and 2.8 mm. (Figures 5 and 6). A $20,000 project for 1991-1992 was funded by Canadian Mortgage and Housing Corporation to study the technical and commercial feasibility of developing the sand barrier method in Canada. This method is likely to be successful in Canada and should generate a new product for the Aggregate Producer's Industry and new installation opportunities for the construction trades and for pest control companies.

Figure 5

The Relationship of Particle Size to Effectiveness of Sand Barrier for Prevention of Subterranean Termites

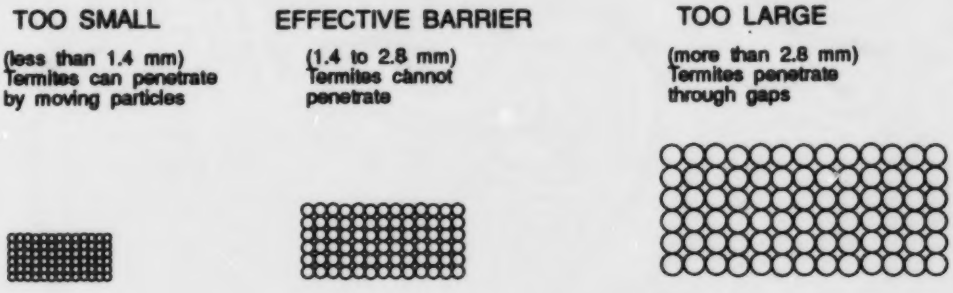
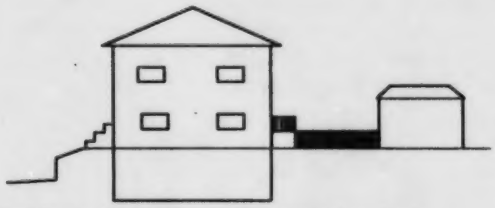
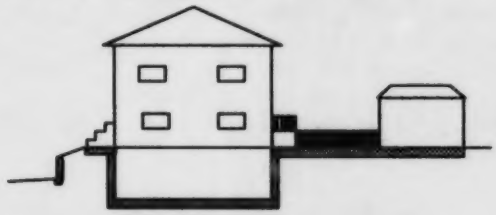


Figure 6

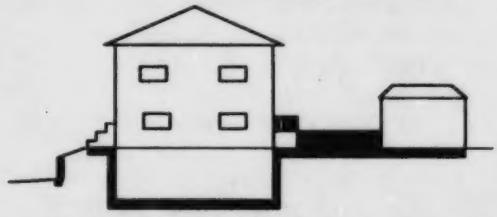
Comparison of the Installation of a Sand Barrier and a Chemical Barrier for Subterranean Termite Control



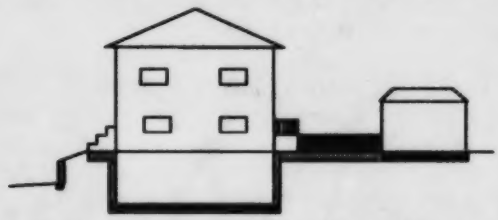
Unprotected property vulnerable to attack by subterranean termites.



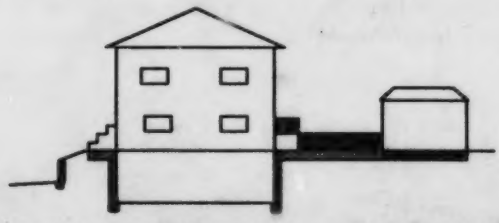
Property fully protected by a sand barrier installed during construction.



Property fully protected by a chemical barrier installed either during or after construction, probably as a remedial measure subsequent to infestation by subterranean termites.



Property protected by a retrofitted sand barrier and subslab chemical barrier subsequent to infestation by subterranean termites.



Property protected by a retrofitted sand barrier and chemical barrier at footings, subslab treatment below basement slab may not be necessary.

Alternatives to Poison Gas for Dry-wood Termite Fumigation: Until recently the only method available for killing large infestations of dry-wood termites was the use of chemical fumigants such as methyl bromide. Concern over the safety hazards of such poison gases and the environmental effects of releasing such gases into the atmosphere led to the search for better methods. Surprisingly moderate air temperatures of 60-80°C can penetrate 2" x 4" timbers in insulated wall voids within two hours to kill termites at a critical thermal maxima of 51°C. Heat could be a great boon to the structural pest control industry with applications not only for termites but also for carpenter ants, cockroaches, and other pests.

Renewed Funding Necessary For Research

In the US, at least three times as many homes are damaged by termites as by fire. In Canada the situation is not as severe, but is growing. In Ontario, 30 municipalities report some termite infestation. Termite control is as important for protection of buildings as fire control. In Ontario termites mostly affect older and relatively more affordable housing. Termite control, therefore, is as much an affordable housing conservation issue as housing rehabilitation. Since the Termite Control Research Project would significantly benefit housing conservation and safety, it should be funded by all levels of government.

To secure a five year budget for the U. of T. Urban Entomology Program, renewed funding is urgently needed. The project's annual income sharply declined in 1990 and continued decline can be expected as most of the pledges of 1986 from municipal, provincial, and federal sources have now been received. The project's main expenses are salaries for the Director and two technicians. Staffing has already been cut with the loss of a post-doctoral research specialist on termite-fungus interactions. The present funding level is inadequate to continue the practice of hiring summer assistants. Further staff cuts would seriously jeopardize the project's ability to address its mission.

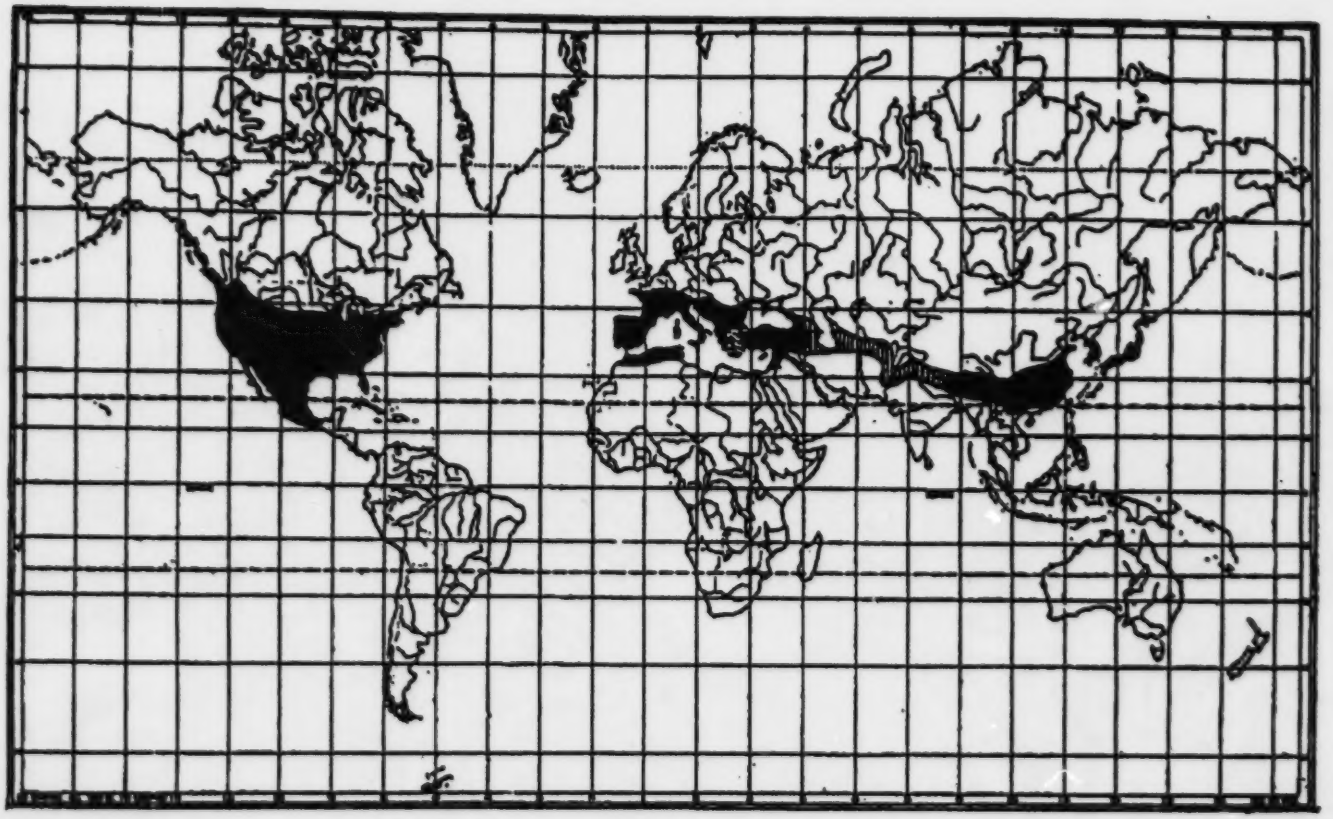
The City of Toronto Housing Department's 1991 operating budget includes a grant for $50,000 towards termite control research. It is the Housing Department's intention to designate $50,000 towards the research project for subsequent years 1992-1995 inclusive. The U. of T. program initiated a funding campaign in the fall of 1990 asking Ontario municipalities to consider funding at the rate of $.25 per household. Response was limited. Only 4 municipalities, including the City of Toronto, responded with donations in 1990.

In July 1991, the Termite Advisory Committee (of which the City of Toronto is a member) approved the concept of establishing a "municipal co-operative" to equitably share the cost of funding future research not covered by research grants. Municipalities will be asked to select from among three levels of financial participation. A subscribing membership involves a donation of at least $1000 or $.05 per household. A participating membership requires a donation of at least $5000 or $.10 per household. A research membership requires a donation of at least $10,000 or $.20 per household. Membership services vary with the donation and range from an annual workshop for inspectors and limited consulting, to municipality-based research trials and designing and implementing an eradication plan.

Other sources of funding for the Urban Entomology Program are being pursued. Grants have been received from Canada Mortgage and Housing Corporation, from the Research Advisory Committee and the Environmental Youth Corps of the Ontario Ministry of the Environment, and a University of Toronto new staff grant program. Further grant proposals will be prepared for CMHC, the Ontario Ministry of Housing, the Ministry of the Environment's Ontario Pesticide Advisory Committee, and for the National Science and Engineering Research Council. Efforts will also be undertaken to seek funding from termite infested municipalities in Manitoba and British Columbia, from the Toronto Real Estate Board, the Ontario Real Estate Association, and from other industrial and philanthropic sources.

Those interested can obtain more information about the program's activities and research projects by contacting Dr. Timothy Myles at the Urban Entomology Program, Faculty of Forestry, University of Toronto, Earth Sciences Centre, 33 Willcocks Street, Toronto, M5S 3B3, 416-978-5755.

WORLD DISTRIBUTION OF SUBTERRANEAN TERMITES IN THE GENUS RETICULITERMES.



Note
that the genus is mainly confined to temperate latitudes and strictly confined to the northern hemisphere. Hatched areas are assumed; solid areas are based on interpretations of published records. Modified from C.A. Kofoid, 1934. Termites and Termite Control Univ, Calif. Press.

MAP 1

THE NORTHERN DISTRIBUTION OF SUBTERRANEAN TERMITES (RETICULITERMES SPP.) IN NORTH AMERICA.

Dots on map indicate documented cases of subterranean termite infestion. Two separate cases of introduction to Ottawa, Ontario are presumed to have been eradicated. The record for Creston in southeastern B.C. is somewhat questionable. Termites are fairly common in the southern areas of the states which are shown, and are common southward.

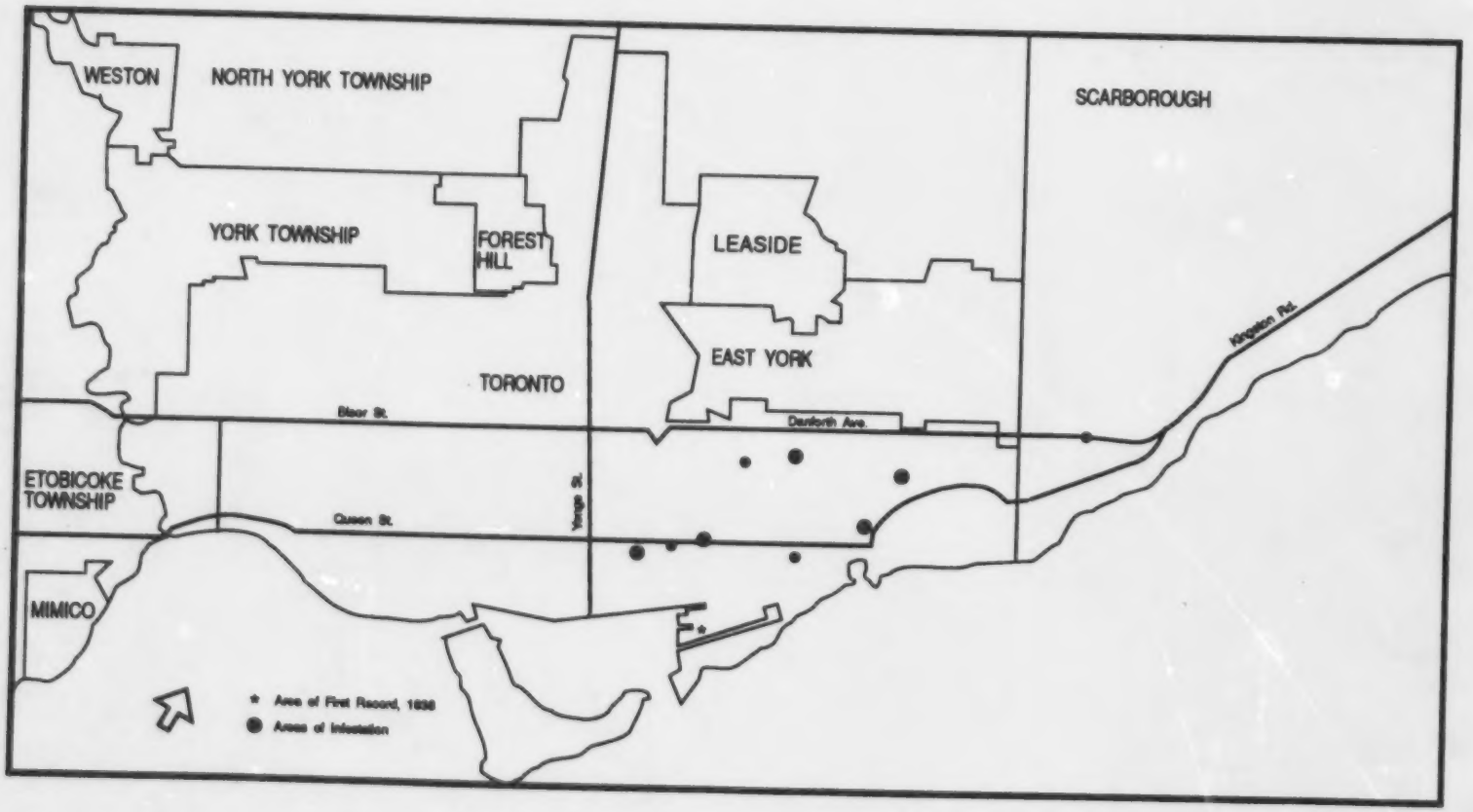
MAP 2

DISTRIBUTION OF RETICULITERMES FLAVIPES IN SOUTHERN ONTARIO

Note
that the two cases of introduction to Ottawa are considered to have been eradicated.

MAP 3

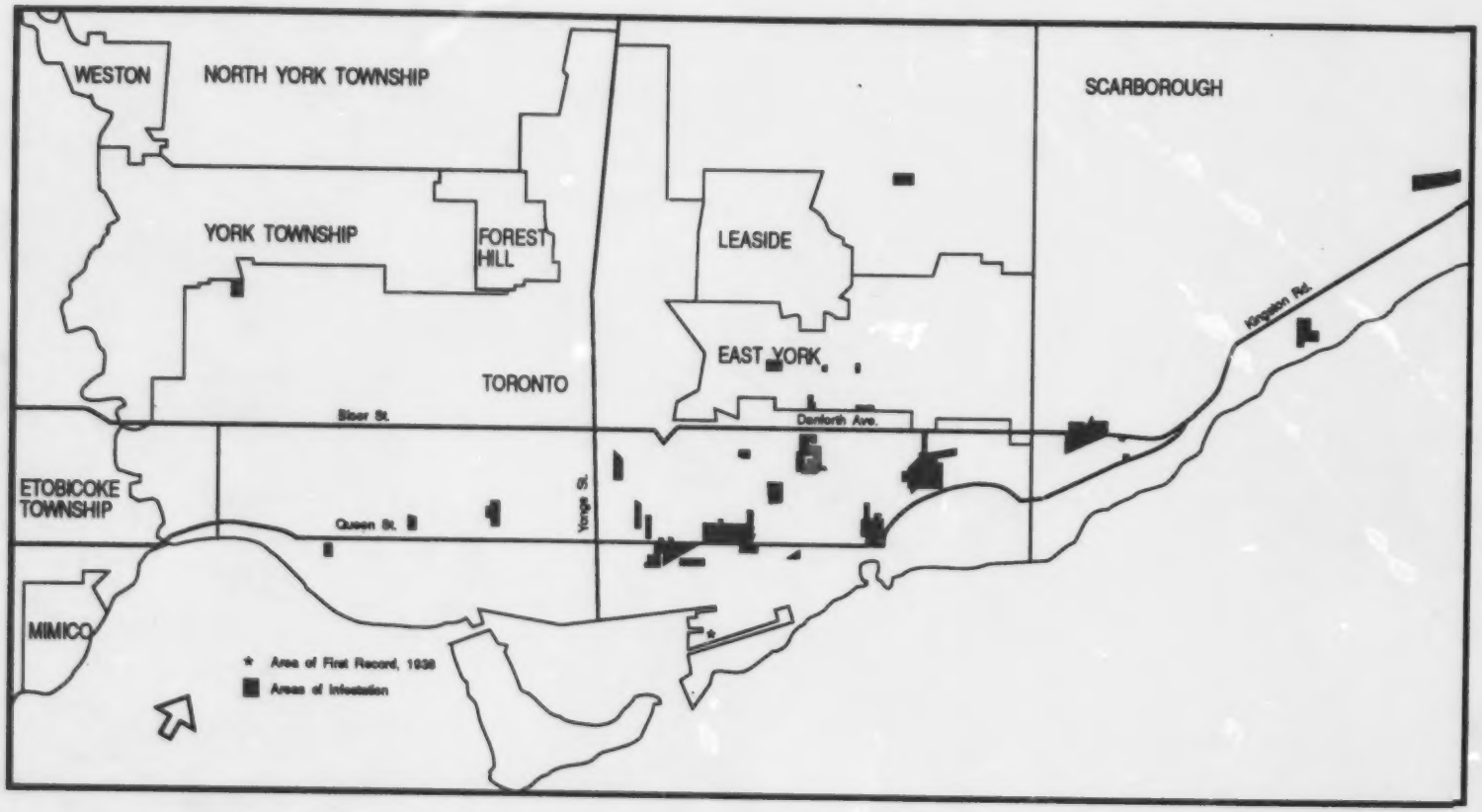
TERMITE DISTRIBUTION
TORONTO REGION - 1949



Source
Canada Department of Forestry and Rural Development-Forestry Branch, Information Report 1963-1, April 1963, "Termites in Ontario with Particular Reference to the Toronto Region"

MAP 4

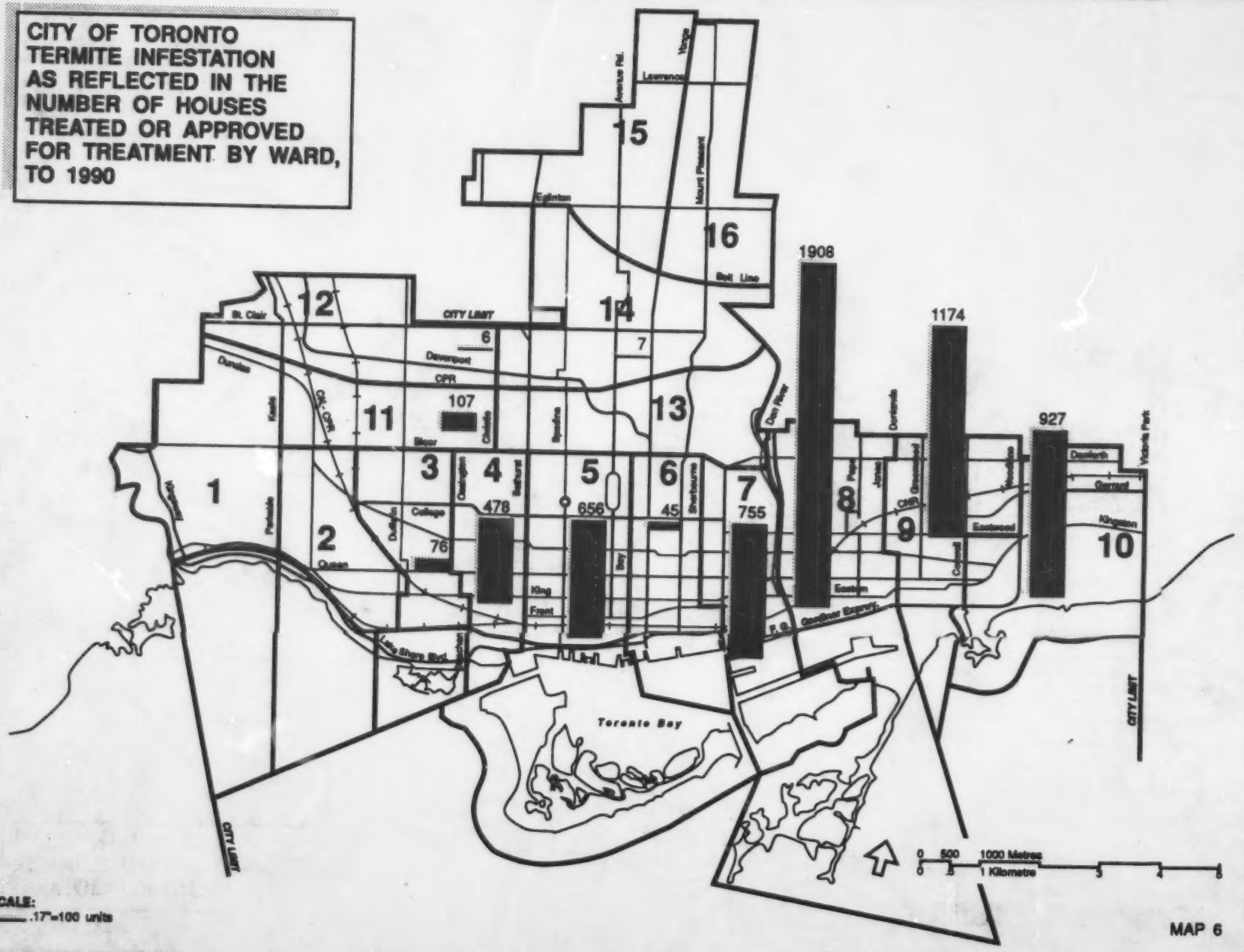
TERMITE DISTRIBUTION METROPOLITAN TORONTO - 1962



Source
Canada Department of Forestry and Rural Development-Forestry Branch, Information Report 1963-1, April 1963, "Termites in Ontario with Particular Reference to the Toronto Region"

MAP 5

CITY OF TORONTO
TERMITE INFESTATION
AS REFLECTED IN THE
NUMBER OF HOUSES
TREATED OR APPROVED
FOR TREATMENT BY WARD,
TO 1990



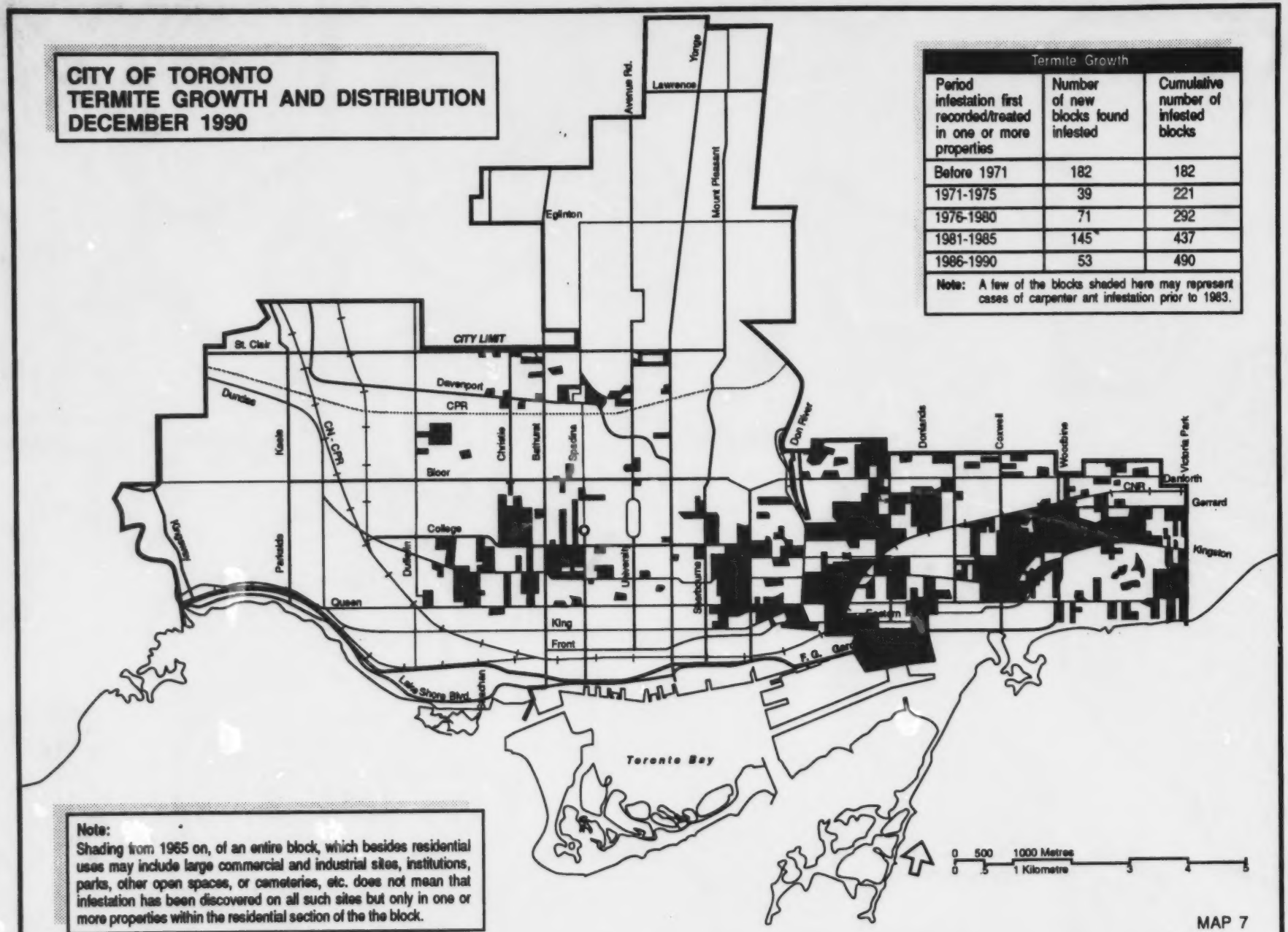
SCALE:
.17"=100 units

MAP 6

CITY OF TORONTO
TERMITE GROWTH AND DISTRIBUTION
DECEMBER 1990

Termite Growth		
Period infestation first recorded/treated in one or more properties	Number of new blocks found infested	Cumulative number of infested blocks
Before 1971	182	182
1971-1975	39	221
1976-1980	71	292
1981-1985	145	437
1986-1990	53	490

Note: A few of the blocks shaded here may represent cases of carpenter ant infestation prior to 1983.



Note:
Shading from 1965 on, of an entire block, which besides residential uses may include large commercial and industrial sites, institutions, parks, other open spaces, or cemeteries, etc. does not mean that infestation has been discovered on all such sites but only in one or more properties within the residential section of the the block.

MAP 7

Description Of Sectors Relative To The Former And The Current City Wards

Map 6 shows the boundaries of the current 16 City wards, which replaced the former eleven municipal wards as they were constituted until the civic election held in November, 1988. The following is a description of sectors relative to the former and current City Wards.

Sector and Former Municipal Wards		Sector and Current Municipal Wards	
The West-End		**The West-end**	
Ward 1:	Divisions 1-1, 1-2, 1-3 and 1-4	Ward 1:	Entire Division 1-2 and only parts of Divisions 1-1, 1-3 and 1-4
Ward 2:	Divisions 2-1, 2-2, 2-3 and 2-4	Ward 2:	Divisions 2-1, 2-2 and 2-3
Ward 3:	Divisions 3-1, 3-2 and 3-3	Ward 3:	Entire Division 2-4 (previously in the former Ward 2). The rest of the Ward is in the Central City area.
		Ward 11:	Only parts of Divisions 1-3 and 1-4 (previously in the former Ward 1) and entire Division 3-1 (previously in former Ward 3). The rest of the Ward is in the Central City area.
		Ward 12:	Only part of Division 1-4 (previously in the former Ward 1) and entire Divisions 3-2 and 3-3 (previously in the former Ward 3). The rest of the Ward is in the Central City.
The Central City		**The Central City**	
Ward 4:	Divisions 4-1, 4-2, 4-3 and 4-4	Ward 3:	Parts of Divisions 4-1, 4-2, 4-3 and 4-4 (previously in the former Ward 4)
		Ward 4:	Parts of Divisions 4-1, 4-2, 4-3 and 4-4 (previously in the former Ward 4) and parts of Division 6-2, 6-5 and 6-7 (previously in the former Ward 6)
Ward 5:	Divisions 5-1, 5-2, 5-3 and 5-4	Ward 11:	Only part of Division 5-1 (previously in the former Ward 5)
		Ward 12:	Only part of Division 5-3 (previously in the former Ward 5)

Sector and Former Municipal Wards		Sector and Current Municipal Wards	
The Central City Cont'd			
		Ward 13:	Only part of Division 5-1 and entire Divisions 5-2 (previously in the former Ward 5)
		Ward 14:	Only part of division 5-3 and entire 5-4 (previously in the former Ward 5)
Ward 6:	Divisions 6-1, 6-2, 6-3, 6-4, 6-5, 6-6, 6-7 and 6-8	Ward 5:	Only parts of Divisions 6-1, 6-2, 6-3, 6-5, 6-6, 6-7 (previously in the former Ward 6)
		Ward 6:	Only parts of Division 6-1, 6-3 entire Division 6-4, parts of Division 6-6 and 6-8 (previously in former Ward 6) and part of Division 7-1 (previously in the former Ward 7)
The East-End		**The East-End**	
Ward 7:	Divisions 7-1, 7-2, 7-3, 7-4 and 7-5	Ward 7:	Part of Division 7-1, entire Divisions 7-2 and 7-4 (previously in the former Ward 7) and part of Division 8-1 (previously in the former Ward 8)
Ward 8:	Divisions 8-1, 8-2, 8-3, and 8-5	Ward 8:	Part of Division 7-1 and entire Divisions 8-4 7-3 and 7-5 (previously in the former Ward 7), part of Division 8-1, entire Division 8-2, part of Division 8-3, entire Division 8-4 and part of Division 8-5 (previously in the former Ward 8)
Ward 9:	Divisions 9-1, 9-2, 9-3, 9-4, 9-5 and 9-6	Ward 9:	Parts of Division 8-1, 8-3 and 8-5 (previously in the former Ward 8) and entire Division 9-4 (previously in the former Ward 9)
		Ward 10:	Entire Divisions 9-1, 9-2, 9-3, 9-5 and 9-6 (previously in the former Ward 9)

Sector and Former Municipal Wards	Sector and Current Municipal Wards
The North-Toronto	**The North-Toronto**
Ward 10: Divisions 10-1, 10-2, 10-3, 10-4 and 10-5	Ward 13: Entire division 10-1 (previously in the former Ward 10)
	Ward 14: Entire Division 10-2 and part of Division 10-3 (previously in the former Ward 10), entire Division 11-1 and part of Division 11-2 (previously in the former Ward 11)
Ward 11: Divisions 11-1, 11-2, 11-3, 11-4, 11-5 and 11-6	Ward 15: Part of Division 11-2 and entire Divisions 11-3, 11-4, 11-5 and 11-6 (previously in the former Ward 11)
	Ward 16: Part of Division 10-3 and entire Divisions 10-4 and 10-5 (previously in the former Ward 10)

Termite infestation is limited to sections of Central City and the East-End. The West-End and North-Toronto as described above have so far remained free.

Section 2

Carpenter Ant Control

Carpenter Ant Control

Although the enabling provincial legislation and the program mandate of the City's Termite Control Program apply to all wood-destroying insects, including carpenter ants, provincial grants were available until 1988 only for treatment of termite infestation. However, the City of Toronto has been providing carpenter ant control grants from its own funds since 1966. Compared with termites, carpenter ants pose a considerably lesser threat and can be treated more easily at a smaller cost. However, chemical treatment for carpenter ants lasts for a relatively shorter period compared with that for termites, and may have to be repeated more frequently.

Carpenter Ants Not As Serious A Threat As Termites

Compared with the scale of termite infestation, measured in terms of the number of houses and city blocks which have been subjected to infestation, a much smaller number of properties has been affected by carpenter ants (Tables 2.1 and 2.2, and Map 8).

The City has been getting carpenter ant control grant applications in small numbers since 1966. Cases of carpenter ant infestation are widely distributed. For example, the average number of applications approved per block infested since 1966 is only 1.3. In 1983, the first year that accurate statistics on carpenter ants began to be maintained, the north-end Wards 14-16, accounted for a large number of grant applications, but the pattern seems to have changed since 1985 as other areas accounted for the majority (61%) of applications (Table 2.1).

Carpenter Ant Control Grants Solely Funded By The City

Carpenter ant control grants are awarded entirely from the City's own resources. Applicants can get 25% of the cost of chemical treatment to a maximum of $125.

In 1989, the City awarded 35 grants amounting to $2,013. The average cost of treatment was $232 and the average grant was $58.

In 1990, the City awarded 12 grants amounting to $800. The average cost of treatment was $267 and the average grant was $67.

Table 2.1

Number of Houses Treated or Approved for Treatment for Carpenter Ants by Period and Wards

	Wards																
Period	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**Total**
Before 1983																	113 *
1983				1			2	2	3	12			1	14	16	8	59
1984	1		1		1		1	1	1	5		1	1	4	8	6	31
1985	1					1	3	5	4	6		1		6	4	4	35
1986	1	1		1			3	2		13				2	5	3	31
1987	4							2	2	5			2	6	3	5	29
1988				2						12			3	5	3	4	29
1989	1	-	-	-	-	-	-	1	2	16	-	1	1	4	2	7	35
1990	1	-	-	-	1	-	1	1	1	1	1	2	-	1	1	1	12
1983-1990	9	1	1	4	2	1	10	14	13	70	1	5	8	42	42	38	261
GRAND TOTAL																	374

* *As a result of re-constitution of the former eleven wards into the 16 current wards in 1988, many divisions of the former wards were split and reassigned to the new wards. In some instances parts of a single Division of a former ward were reassigned to more than two current wards. As the carpenter ant statistics for the period before 1983 were available only at the former ward level and not at the level of Division or parts of the division reassigned to the new wards, it was not possible to convert the pre 1983 data to the current wards. Therefore only total numbers are given here for the years before 1983. However, before 1983, the North-End wards 14-16 accounted for more than 80% of cases of carpenter ant infestation.*

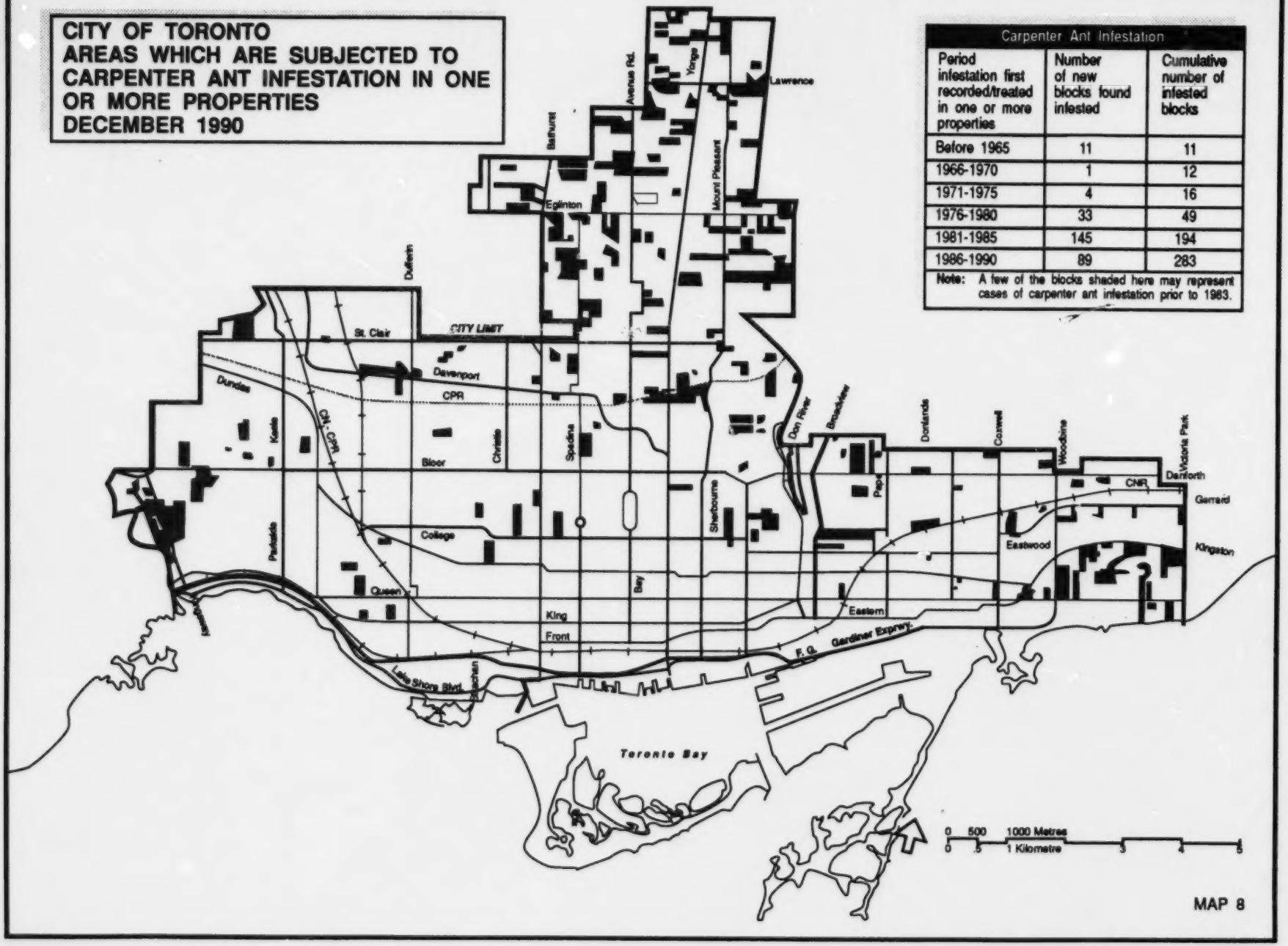
Table 2.2

Number of Blocks Where Carpenter Ant Infestation First Recorded in One or More Properties by Period and Ward

	Wards																
Period	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**Total**
Before 1983																	97 *
1983				1			2	2	3	7				10	12	7	44
1984	1		1		1		1	1	1	4		1	1	4	6	4	26
1985	1					1	2	4	4	4		1		4	3	3	27
1986	1	1		1			2	2		9				1	3	1	21
1987	4							2	1	4			2	5	3	4	25
1988				2						7			3	3	3	4	22
1989	1	-	-	-	-	-	-	1	2	2	-	1	1	2	-	3	13
1990	1	-	-	-	-	-	-	1	-	1	1	2	-	1	-	1	8
1983-1990	9	1	1	4	1	1	7	13	11	38	1	5	7	30	30	7	187
GRAND TOTAL																	283

* *As a result of re-constitution of the former eleven wards into the 16 current wards in 1988, many divisions of the former wards were split and reassigned to the new wards. In some instances parts of a single Division of a former ward were reassigned to more than two current wards. As the carpenter ant statistics for the period before 1983 were available only at the former ward level and not at the level of Division or parts of the division reassigned to the new wards, it was not possible to convert the pre 1983 data to the current wards. Therefore only total numbers are given here for the years before 1983. However, before 1983, the North-End wards 14-16 accounted for more than 80% of cases of carpenter ant infestation.*

CITY OF TORONTO
AREAS WHICH ARE SUBJECTED TO CARPENTER ANT INFESTATION IN ONE OR MORE PROPERTIES
DECEMBER 1990



Carpenter Ant Infestation		
Period infestation first recorded/treated in one or more properties	Number of new blocks found infested	Cumulative number of infested blocks
Before 1965	11	11
1966-1970	1	12
1971-1975	4	16
1976-1980	33	49
1981-1985	145	194
1986-1990	89	283

Note: A few of the blocks shaded here may represent cases of carpenter ant infestation prior to 1983.

MAP 8

Statistics:

Appendices

EXPLANATORY NOTES TO APPENDICES

References to these notes appear as footnotes to appendices

1. **Properties Treated Under Termite Control Program:**

   Residential properties (mainly houses) where home owners applied for and received (in most cases) municipal and/or provincial grants for treating infestation from the City of Toronto.

2. **Properties Treated Independently:**

   Residential properties (mainly houses, but including a small number of row-houses, low-rise residential and mixed residential commercial buildings) treated independently by owners who neither applied for nor received municipal and/or provincial grants for treating termite infestation from the City of Toronto.

3. **Central City and East-End Sectors:**

   A description of various sectors of the City relative to the former and current municipal wards appears elsewhere in this report. However, termites have been recorded only in the Central City and East-End Sectors to which the statistics presented in the Appendices relate. The West and the North-Ends have recorded no evidence of termite infestation.

4. **Sections of Wards 3, 11, 12, 13 and 14:**

   The statistics include only those Sections of current Ward 3, which were in the former Ward 4 and only those Sections in current Wards 11, 12, 13 and 14, which constituted the former Ward 5, which are located in the Central City. The remaining Sections of these Wards are located in the West and the North Toronto and are not included.

5. **Number of City Blocks Newly Affected By Termites where infestation in one or more properties was for the first time treated under both the Termite Control Program as well as Independent category during the period indicated:**

   These blocks signify termite infestation and contain not only all of the properties treated under the Termite Control Program but in addition the independently treated properties, including a small number of non-residential properties.

6. **Number of City Blocks Newly Affected By Termites where infestation in one or more properties was for the first time exclusively treated independently during the period indicated:**

   City blocks where the only properties treated were the ones exclusively treated independently by the owners. However, these blocks contain only a small proportion of independently treated properties, most of which were located in the same blocks as properties treated under the Termite Control Program.

TERMITE CONTROL STATISTICS

APPENDIX 1

HOUSES TREATED / APPROVED FOR TREATMENT UNDER THE TERMITE CONTROL PROGRAM[1] BY PERIOD, SECTOR AND WARD

	Central City Sector[3] Wards						East-End Sector[3] Wards					
Period	3[4]	4	5	6	11-14[4]	Sub Total	7	8	9	10	Sub Total	City Total
1965-80												
No.		104	519*	2	11	636	353	807	583	294	2037	2673
%		4	19			24	13	30	22	11	76	100
1981		36	5		12	53	39	78	54	65	236	289
1982	4	74	18	4	42	142	42	99	66	96	303	445
1983	6	68	13	3	34	124	23	48	39	26	136	260
1984	23	56	14	8	6	107	53	135	92	99	379	486
1985	5	32	15	4	5	61	50	130	61	61	302	363
1981-85												
No.	38	266	65	19	99	487	207	490	312	347	1356	1843
%	2	15	3	1	5	26	11	27	17	19	74	100
1986	15	32	17	5	2	71	31	142	79	54	306	377
1987	6	17	14	1	1	39	57	180	71	57	365	404
1988	5	27	21	7	6	66	55	158	60	94	367	433
1989	1		1			2		1	2		3	5
1990	1	4		1		6	1	18	10	6	35	41
1986-90	28	80	53	14	9	184	144	499	222	211	1076	1260
No.												
%	2	7	4	1	1	15	11	39	18	17	85	100
1965-90	66	450	637	35	119	1307	704	1796	1117	852	4469	5776
No.												
%	1	8	11	1	2	23	12	31	19	15	77	100

1, 3, 4: Please refer to corresponding Explanatory Notes To Appendices (p. 40).

* *Ward 5 figures up to - 1980 include 424 houses treated under Kensington Neighbourhood Improvement Program: 1976-28, 1977-228, and 1978-172*

APPENDIX 2

HOUSES TREATED AGAINST TERMITES INDEPENDENTLY BY OWNERS[2] BY PERIOD, SECTOR AND WARD

	Central City Sector[3] Wards						East-End Sector[3] Wards					
Period	3[4]	4	5	6	11-14[4]	Sub Total	7	8	9	10	Sub Total	City Total
1965-80												
No.	1	3	12	1	1	18	19	51	27	23	120	138
%	0.7	2.2	8.7	0.7	0.7	13.0	13.7	37	19.6	16.7	87	100
1981		1			3	4	48	1	3	3	55	59*
1982	2	4	1		7	14	6	11	3	3	23	37
1983	1	5	1	2	2	11	9	8	1	9	27	38
1984	5	2		1	4	12	306	15	8	9	338	350**
1985		1	2	2	12	17	6	11	3	7	27	44
1981-85												
No.	8	13	4	5	28	58	375	46	18	31	470	528
%	1.5	2.5	0.8	0.9	5.3	11	71	9	3	6	89	100
1986		3	2		4	9		7	3	2	12	21
1987							1	5	1	2	9	9
1988	2	3	1	2		8	1	4	4	9	18	26
1989	1	6		2		9	6	5	5	10	26	35
1990***												
1986-89												
No.	3	12	3	4	4	26	8	21	13	23	65	91
%	3.3	13.2	3.3	4.4	4.4	29	9	23	14	25	71	100
1965-89												
No.	12	28	19	10	33	102	402	118	58	77	655	757
%	2	4	2	1	4	13	53	16	8	10	87	100

2, 3, 4: *Please refer to corresponding Explanatory Notes To Appendices (p. 40).*

* *1981 figures include 315 Gerrard Street East (46 social housing apartment units) in South St. James Town in Ward 7*

** *1984 figures include townhouses and apartment buildings (305 social housing units) in the North St. James Town in Ward 7 and 10 scattered units in Wards 8, 9 and 10.*

*** *Data for 1990 not available from the Ministry of the Environment at the time of writing and will be included in the next Termite Report.*

APPENDIX 3*

TOTAL HOUSES TREATED UNDER TERMITE CONTROL PROGRAM[1] AND INDEPENDENTLY[2] BY OWNERS BY PERIOD, SECTOR AND WARD

	Central City Sector[3] Wards						East-End Sector[3] Wards					
Period	3[4]	4	5	6	11-14[4]	Sub Total	7	8	9	10	Sub Total	City Total
1965-80												
No.	1	107	531	3	12	654	372	858	610	317	2157	2811
%	0.03	4	19	0.1	0.4	23	13	31	22	11	77	100
1981		37	5		15	57	87	79	57	68	291	348
1982	6	78	19	4	49	156	48	110	69	99	326	482
1983	7	73	14	5	36	135	32	56	40	35	163	298
1984	28	58	14	9	10	119	359	150	100	108	717	836
1985	5	33	17	6	17	78	56	141	64	68	324	407
1981-85												
No.	46	279	69	24	127	545	582	536	330	378	1826	2371
%	2	12	3	1	5	23	25	23	14	15	77	100
1986	15	35	19	5	6	80	31	149	82	56	318	398
1987	6	17	14	1	1	39	58	185	72	59	374	413
1988	7	30	22	9	6	74	56	162	64	103	385	459
1989	2	6	1	2		11	6	6	7	10	29	40
1990	1	4		1		6	1	18	10	6	35	41
1986-90												
No.	31	92	56	18	13	210	152	520	235	234	1141	1351
%	2	7	4	2	1	16	11	39	17	17	84	100
1965-90												
No.	78	478	656	45	152	1409	1106	1914	1175	929	5124	6533
%	1.2	7.3	10	0.7	2.4	22	17	29	18	14	73	100

* *This is a composite of Appendices 1 and 2. Figures for 1990 do not include independently treated properties as the information was not available at the time of writing and will be included in the next Termite Report.*

1, 2, 3, 4: *Please refer to corresponding Explanatory Notes To Appendices (p. 40).*

APPENDIX 4*
DISTRIBUTION OF TOTAL BLOCKS NEWLY AFFECTED BY TERMITES WHERE PROPERTIES TREATED UNDER TERMITE CONTROL PROGRAM[5] AND INDEPENDENT CATEGORIES[6] BY PERIOD, SECTOR AND WARD

	Central City Sector[3] Wards						East-End Sector[3] Wards					
Period	3[4]	4	5	6	11-14[4]	Sub Total	7	8	9	10	Sub Total	City Total
Before 1971	2	1	5	4		12	23	58	55	34	170	182
1971-75		5	3		2	10	6	8	5	10	29	39
1976-80		3	13	1	7	24	7	18	9	13	47	71
1981		6	1		5	12	4	4	5	11	24	36
1982	1	3	1	2	9	16	4	6	3	11	24	40
1983	2			1	2	5	2	2	2	2	8	13
1984	1	2		2	1	6	5	6	5	6	22	28
1985		4	3	3	7	17	2	3	3	3	11	28
1981-85	4	15	5	8	24	56	17	21	18	33	89	145
1986	2	1	3	1	2	9	1	6	1	4	12	21
1987	1	4	1	1		7	2	1	4	2	9	16
1988	1	1	2	1		5	3	2		2	7	12
1989			1			1		1		1	2	3
1990									1		1	1
1986-90	4	6	7	3	2	22	6	10	6	9	31	53
GRAND TOTAL	10	30	33	16	35	124	59	115	93	99	366	490

* *Figures presented here are inclusive of figures in Appendix 5.*

3, 4, 5, 6: *Please refer to corresponding Explanatory Notes To Appendices (p. 40).*

APPENDIX 5 *

DISTRIBUTION OF BLOCKS NEWLY AFFECTED BY TERMITES WHERE PROPERTIES EXCLUSIVELY TREATED INDEPENDENTLY[6] BY PERIOD, SECTOR AND WARD

	Central City Sector[3] Wards						East-End Sector[3] Wards					
Period	3[4]	4	5	6	11-14[4]	Sub Total	7	8	9	10	Sub Total	City Total
1971-75					1	1		1	3		4	5
1976												
1977												
1978					1	1		1	1		2	3
1979			1			1						1
1980										1	1	1
1976-80			1		1	2		1	1	1	3	5
1981		1					1				1	2
1982		1			1	2			1		1	3
1983				1		1						1
1984					1	1		2	1	1	5	6
1985			2	3	6	11	1	2	1	2	6	17
1981-85		2	2	4	8	16	3	4	3	3	13	29
1986	1	1	3		1	6		1	1		2	8
1987												
1988				1		1				1	1	2
1989			1			1		1		1	2	3
1990	Not available at the time of writing											
1986-90	1	1	4	1	1	8		2	1	2	5	13
GRAND TOTAL	1	3	7	5	11	27	3	8	5	9	25	52

* Figures presented in Appendix 4 are inclusive of figures in this Appendix.

3, 4,6: *Please refer to corresponding Explanatory Notes To Appendices (p. 40).*

APPENDIX 6

TOTAL BLOCKS* AND BLOCKS AFFECTED BY TERMITES BY SECTOR AND WARD, 1990

Sector and Ward	Total Number of Blocks	Affected Blocks* Number	Affected Blocks* % of Total Blocks
Central City[3]			
3[4]	89	11	12
4	142	30	21
5	243	33	14
6	187	16	9
11-14[4]	251	35	14
Subtotal - Central City	912	124	14
East-End[3]			
7	141	59	42
8	228	115	50
9	190	93	49
10	214	99	46
Subtotal - East-End	773	366	47
TOTAL	1685	490	29

* *Irrespective of whether properties were treated under the Termite Control Program or independently.*

3, 4: *Please refer to corresponding Explanatory Notes To Appendices (p. 40).*

APPENDIX 7*

TOTAL HOUSE-FORM DWELLING STOCK[1], HOUSES TREATED/APPROVED FOR TREATMENT AND STOCK LOCATED WITHIN BLOCKS AFFECTED BY TERMITES BY WARD AND AREA, 1990

Ward and Sector	Total House-Form Dwelling Stock	Houses Treated or Approved for Treatment		Houses Located Within Affected Blocks		
		Number	As % of Total Stock	As % of Houses In Affected Blocks	Number[3]	As % of Total Stock
3	3,291	78	2	16	493	15
4	6,294	478	8	22	2,166	34
5	5,518	656	12	39	1,696	31
6	3,035	45	1	12	365	12
11-14	10,232	152	1	6	2,487	24
Subtotal - Central City	**28,370**	**1,409**	**5**	**19**	**7,207**	**25**
7	2,556	1,106	43	59	1,863	73
8	10,621	1,914	18	29	6,694	63
9	10,366	1,175	11	21	5,614	54
10	10,049	929	9	17	5,420	54
Subtotal - East-End	**33,592**	**5,124**	**15**	**26**	**19,591**	**58**
TOTAL	**61,962[2]**	**6,533**	**11**	**24**	**26,798**	**43**

* *This Appendix is related to all the properties treated either under the Termite Control Program or independently.*

[1] *Dwellings in non-apartment type buildings (mainly in the owner-occupied, tenant-occupied and owner/tenant-occupied categories) based on the City of Toronto data from the Standard Assessment system of the Ontario Ministry of Revenue (1987 Survey for taxation in 1988, the latest year for which the information was available). The figures take into account net change in the stock due to demolition, new construction and conversion or de-conversion between 1980 and 1987.*

[2] *These 61,962 houses are located in the 1685 blocks of the Central City and the East-End. The 54,357 house-form dwellings located in 1,380 blocks in the West-End and North-Toronto are not shown as no active termite infestation has occurred there since the introduction of termite control program in 1965. A description of the areas relative to the old and the current wards appears separately in this report.*

[3] *Total number of houses located within the 490 blocks where infestation has been recorded in one or more properties, including 42 blocks found infested (and therefore presumably treated) before 1965 (Appendix 7).*

APPENDIX 8

INVENTORY OF NEW CITY OF TORONTO BLOCKS SUBJECTED TO TERMITE INFESTATION BY YEAR AND SIZE OF HOUSE-FORM DWELLING STOCK, 1990

Introduction

This inventory shows the City of Toronto blocks subject to termite infestation, by the year in which infestation was first recorded or treated, in one or more properties, in each of those blocks. In the past years, only the blocks where infestation had been treated under the City's Termite Control Program were included. Beginning with the 1991 Termite Report, the inventory also includes the blocks where the only properties treated were the ones treated by owners independently of the city's program, from 1972 onwards. The inventory shows the total number of house-form dwellings located in each of the affected blocks. The number of house-form dwellings located within the blocks listed here should not be confused with the number of houses actually treated or approved for treatment annually. The number of houses actually treated or approved for treatment appears elsewhere in this report, and represents only a fraction of the total house-form stock within those blocks.

The year indicated represents the year in which infestation was first recorded or treated in one or more properties located within the subject block.

In column one, newly infested blocks in a given period are grouped by Ward, and by Ward division where numbers warrant. They are listed in order by block number, which can be found as the last number in column four. The total number of blocks is indicated in column two. The Wards indicated are the current municipal wards as reconstituted since November, 1988.

In column three, the four numbers respectively denote the current City Ward, the former City Ward, the division and the block number. This numbering of blocks is based on the City of Toronto Assessment Block map which shows the boundaries and numbering of each of those areas. For example, 3-4-2-44 indicates current Ward 3, former Ward 4, Division 2 and Block 44.

Columns four and five indicate the number of house-form dwellings in each affected block, and the total number of house-form dwellings in each Ward. This data comes from the City of Toronto database, which is based on the Standard Assessment Systems (SAS) of the Ontario Ministry of Revenue.

The house-form dwelling stock figures appearing in the last column in respect of all the blocks where infestation was recorded up to the end of 1981, are based on the property assessment survey carried out in 1980 for the purpose of taxation in 1981. The house-form dwelling figures for all the blocks recorded as infested from 1982 onwards, are for the year immediately preceding the given year or based on the 1987 enumeration for purpose of taxation in 1988.

This inventory is the basis of maps showing the spread of termites in the City of Toronto.

INVENTORY OF NEW CITY BLOCKS SUBJECTED TO TERMITE INFESTATION

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
Before 1965				
Ward 3				
1		3-4-2-44	68	
2		3-4-2-45	44	
	2			**112**
Ward 5				
1		5-6-5-29	25	
2		5-6-5-47	--	
3		5-6-5-48	67	
4		5-6-5-67	73	
5		5-6-5-68	76	
	5			**241**
Ward 6				
1		6-6-4-33	--	
2		6-6-4-52	4	
3		6-6-4-54	14	
4		6-6-8-02	--	
	4			**18**
Ward 7				
1		7-7-1-26	--	
2		7-7-1-53 (1)	--	
3		7-7-1-53 (2)	38	
4		7-7-1-55	38	
5		7-7-1-56	20	
6		7-7-1-57	32	
7		7-7-1-58	1	
8		7-7-1-59	15	
9		7-7-1-65	--	
10		7-7-1-66	--	
11		7-7-1-67	12	
12		7-7-1-68	9	
13		7-7-1-70	9	
14		7-7-1-72	12	
15		7-7-1-73	9	195
1		7-7-2-04	30	
2		7-7-2-30	57	87
	17			**282**

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
Before 1965 continued				
Ward 8				
1		8-7-1-17	93	
2		8-7-1-18	86	
3		8-7-1-19	17	
4		8-7-1-20	90	
5		8-7-1-21	56	342
1		8-7-3-03	--	
2		8-7-3-04	--	
3		8-7-3-06 (1)	13	
4		8-7-3-06 (2)	--	
5		8-7-3-07	43	
6		8-7-3-08	66	
7		8-7-3-09	15	
8		8-7-3-10	51	
9		8-7-3-11	33	
10		8-7-3-12	65	
11		8-7-3-13	93	
12		8-7-3-14	14	
13		8-7-3-15	15	
14		8-7-3-16	58	
15		8-7-3-23	38	
16		8-7-3-24	81	
17		8-7-3-26	77	662
1		8-7-5-04	44	
2		8-7-5-12	59	
3		8-7-5-15	41	
4		8-7-5-16	72	
5		8-7-5-17	80	
6		8-7-5-18	96	392
1		8-8-1-17	--	
2		8-8-1-18	--	
3		8-8-1-32	18	18
1		8-8-2-04	--	
2		8-8-2-18	--	
3		8-8-2-19	34	
4		8-8-2-21	59	93

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
Before 1965 continued				
1		8-8-4-08	38	
2		8-8-4-14	110	
3		8-8-4-19	59	
4		8-8-4-31	25	
5		8-8-4-34	41	
6		8-8-4-48	73	
7		8-8-4-49	61	
8		8-8-4-51	77	484
	43			**1,991**
Ward 9				
1		9-8-3-15	39	
2		9-8-3-16	78	
3		9-8-3-17	64	
4		9-8-3-18	124	
5		9-8-3-19	127	
6		9-8-3-20	77	
7		9-8-3-21	134	
8		9-8-3-35	69	
9		9-8-3-50	63	
10		9-8-3-53	97	872
1		9-8-5-01 (1)	267	
2		9-8-5-01 (2)	65	
3		9-8-5-02	118	
4		9-8-5-04	66	
5		9-8-5-05	52	
6		9-8-5-06	49	
7		9-8-5-07	57	
8		9-8-5-09	36	
9		9-8-5-10	67	
10		9-8-5-47	88	
11		9-8-5-55	11	
12		9-8-5-56	12	
13		9-8-5-60	38	926

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
Before 1965 continued				
1		9-9-4-02	49	
2		9-9-4-04	30	
3		9-9-4-05	38	
4		9-9-4-06	41	
5		9-9-4-07	33	
6		9-9-4-08	27	
7		9-9-4-09	134	
8		9-9-4-10	60	
9		9-9-4-11	44	
10		9-9-4-12	31	
11		9-9-4-13	57	
12		9-9-4-14	12	
13		9-9-4-16	113	
14		9-9-4-18	80	
15		9-9-4-19	46	
16		9-9-4-20	80	
17		9-9-4-21	24	
18		9-9-4-22	20	
19		9-9-4-23	30	
20		9-9-4-24	39	
21		9-9-4-25	64	
22		9-9-4-26	37	
23		9-9-4-51	38	1,127
	46			**2,925**
Ward 10				
1		10-9-2-09	65	
2		10-9-2-10	57	
3		10-9-2-11	46	
4		10-9-2-12	29	
5		10-9-2-13	93	
6		10-9-2-21	27	
7		10-9-2-22	71	
8		10-9-2-23	48	
9		10-9-2-24	9	445
1		10-9-3-20	124	124
1		10-9-5-05	34	
2		10-9-5-06	48	
3		10-9-5-07	60	
4		10-9-5-08	52	
5		10-9-5-09	44	
6		10-9-5-10	53	

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
7		10-9-5-11 (1)	27	
8		10-9-5-11 (2)	21	
9		10-9-5-12	48	
10		10-9-5-13	45	
11		10-9-5-14	39	
12		10-9-5-15	51	
13		10-9-5-16	79	
14		10-9-5-17	55	
15		10-9-5-18	49	
16		10-9-5-19	18	
17		10-9-5-20	28	
18		10-9-5-21	27	
19		10-9-5-33	92	
20		10-9-5-35	81	951
1		10-9-6-12	59	
2		10-9-6-29	61	120
	32			**1,640**
	149	**Total All Wards Before 1965**		**7,209**

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1965 - New Blocks				
1		8-8-2-15	156	
2		8-8-2-22	64	
3		8-8-3-01	128	
4		8-8-3-02	71	
5		8-8-4-50	58	
1		9-8-3-22	125	
2		9-8-5-57	13	
	7	**Total All Wards - 1965**		**615**
1966 - New Blocks				
1		7-7-2-12	38	
1		9-8-5-03	75	
2		9-9-4-01	51	
	3	**Total All Wards - 1966**		**164**
1967 - New Blocks				
1		7-7-2-26	31	
2		7-7-4-01	5	
1		8-8-2-16	44	
2		8-8-2-20	8	
1		10-9-3-36	52	
	5	**Total All Wards - 1967**		**140**
1968 - New Blocks				
1		7-7-2-28	87	
2		7-7-2-29	91	
3		7-7-4-09	61	
1		8-7-3-25	79	
2		8-8-2-07	199	
3		8-8-4-09	47	
1		9-9-4-03	85	
	7	**Total All Wards - 1968**		**649**

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1969 - New Blocks				
1		8-7-5-49	81	
2		8-8-1-41	80	
3		8-8-2-10	102	
4		8-8-4-53	153	
1		10-9-2-20	137	
	5	**Total All Wards - 1969**		**553**
1970 - New Blocks				
1		4-4-4-05	153	
1		8-8-4-47	13	
1		9-8-3-55	211	
2		9-8-5-25	69	
3		9-8-5-50	68	
4		9-8-5-58	13	
	6	**Total All Wards - 1970**		**527**
1971 - New Blocks				
1		4-4-2-41	67	
1		5-6-5-65	30	
2		5-6-5-70	40	
1		8-7-3-21	14	
1		9-8-3-51	60	
2		9-8-5-26	37	
1		10-9-3-02	44	
	7	**Total All Wards - 1971**		**292**
1972 - New Blocks				
1		7-7-2-13	50	
1		8-7-1-15	22	
2		8-8-1-42	50	
1		9-8-3-14	101	
1		14-5-3-35	94	
	5	**Total All Wards - 1972**		**317**

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1973 - New Blocks				
1		4-4-2-20	11	
2		4-4-2-40	35	
3		4-6-5-46	119	
1		7-7-4-10	54	
1		8-7-3-27	92	
2		8-7-3-38	92	
1		9-8-3-23	108	
1		10-9-6-45	26	
	8	**Total All Wards - 1973**		**537**
1974 - New Blocks				
1		4-4-2-43	60	
1		8-8-1-31	29	
1		9-8-3-31	29	
1		10-9-3-48	118	
2		10-9-3-50	31	
3		10-9-6-26	86	
1		11-5-1-63	88	
	7	**Total All Wards - 1974**		**441**
1975 - New Blocks				
1		5-6-5-69	75	
1		7-7-2-05	19	
2		7-7-2-09	33	
3		7-7-4-02	39	
4		7-7-4-08	54	
1		8-8-4-06	36	
2		8-8-4-16	53	
1		10-9-2-01	68	
2		10-9-3-37	41	
3		10-9-5-38	45	
4		10-9-6-37	42	
5		10-9-6-36	57	
	12	**Total All Wards - 1975**		**562**

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1976 - New Blocks				
1		4-4-2-17	40	
(1)				
1		5-6-5-54	33	
1		7-7-2-08	24	
2		7-7-4-25	54	
1		8-7-5-13	37	
2		8-8-2-14	87	
3		8-8-4-18	69	
1		9-8-3-52	70	
1		10-9-5-03	185	
1		14-5-4-22	41	
	10	**Total All Wards - 1976**		**640**
1977 - New Blocks				
1		5-6-5-49	39	
2		5-6-5-72	38	
3		5-6-7-11	243	
1		8-8-4-20	112	
1		9-8-5-43	65	
2		9-8-5-51	65	
3		9-9-4-32	127	
4		9-9-4-33	54	
	8	**Total All Wards - 1977**		**743**
1978 - New Blocks				
1		5-6-5-50	91	
2		5-6-5-51	60	
3		5-6-5-64	26	
4		5-6-5-71	14	
5		5-6-5-73	88	
6		5-6-5-74	40	
1		7-7-1-71	20	
2		7-7-4-11	24	
3		7-7-4-28	51	

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1978 continued				
1		8-7-3-28	85	
2		8-7-5-10	83	
3		8-8-1-43	88	
4		8-8-2-08	124	
5		8-8-4-07	28	
1		9-8-5-33	61	
1		10-9-2-18	50	
2		10-9-3-42	36	
3		10-9-3-46	48	
4		10-9-5-37	25	
1		12-5-3-19	59	
	20	**Total All Wards - 1978**		**1,101**
1979 - New Blocks				
1		4-4-2-42	93	
1		5-5-5-53	48	
1		6-6-6-36	50	
1		7-7-2-10	75	
2		7-7-4-03	43	
1		8-7-5-51	64	
2		8-8-2-06	123	
3		8-8-2-12	32	
1		9-8-3-57	72	
2		9-8-5-13	46	
1		10-9-3-08	71	
2		10-9-3-19	77	
3		10-9-5-43	39	
4		10-9-6-10	51	
	14	**Total All Wards - 1979**		**884**

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1980 - New Blocks				
1		4-4-4-07	202	
1		5-6-5-80	43	
2		5-6-7-37	21	
1		8-7-5-07	48	
2		8-7-5-48	74	
3		8-7-5-52	38	
4		8-8-1-33	103	
5		8-8-4-25	67	
6		8-8-4-55	96	
1		9-8-5-08	39	
1		10-9-5-25	50	
1		10-9-6-13	56	
2		10-9-6-22	51	
3		10-9-6-43	75	
1		11-5-1-62	82	
1		12-5-3-12	45	
1		14-5-3-52	66	
2		14-5-4-08	197	
3		14-5-4-09	193	
	19	**Total All Wards - 1980**		**1,546**
1981 - New Blocks				
1		4-4-1-53	45	
2		4-4-2-14	55	
3		4-4-2-16	87	
4		4-4-2-18	23	
5		4-6-5-44	180	
6		4-6-5-45	137	527
1		5-6-7-44	36	36
1		7-7-1-60	30	
2		7-7-2-25	*	
3		7-7-4-20	8	
4		7-7-4-47	58	96

* Regent Park North Social Housing

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1981 continued				
1		8-7-5-08	169	
2		8-7-5-39	9	
3		8-7-5-42	46	
4		8-7-5-53	38	262
1		9-8-3-13	77	
2		9-8-3-25	131	
3		9-8-3-46	112	
4		9-8-5-21	92	
5		9-9-4-17	53	465
1		10-9-1-04	186	
2		10-9-1-06	69	
3		10-9-1-14	34	
4		10-9-1-19	33	
5		10-9-1-21	10	
6		10-9-1-28	33	
7		10-9-2-19	54	
8		10-9-3-18	85	
9		10-9-3-39	72	
10		10-9-3-44	30	
11		10-9-6-17	49	655
1		11-5-1-61	117	117
1		13-5-1-02	17	
2		13-5-2-37	59	76
1		14-5-3-30	11	
2		14-5-4-25	28	39
	36	**Total All Wards - 1981**		**2,273**
1982 - New Blocks				
1		3-4-3-29	59	59
1		4-4-3-15	128	
2		4-4-4-03	43	
3		4-4-4-04	93	264
1		5-6-7-15	89	89
1		6-6-4-51	7	
2		6-6-6-33	37	44

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1982 continued				
1		7-7-2-03	20	
2		7-7-4-15	51	
3		7-7-4-36	56	
4		7-7-4-46	57	184
1		8-7-3-29	47	
2		8-7-5-06	100	
3		8-7-5-09	145	
4		8-8-4-02	22	
5		8-8-4-17	50	
6		8-8-4-62	51	415
1		9-8-1-27	37	
2		9-8-3-43	89	
3		9-8-5-30	62	188
1		10-9-1-26	36	
2		10-9-2-04	49	
3		10-9-2-08	35	
4		10-9-3-17	84	
5		10-9-3-22	28	
6		10-9-3-24	29	
7		10-9-3-40	13	
8		10-9-3-54	29	
9		10-9-5-26	43	
10		10-9-5-30	26	
11		10-9-5-31	32	404
1		11-5-1-64	55	55
1		12-5-3-20	13	
2		12-5-3-65	35	48
1		13-5-1-05	63	63
1		14-5-3-09	131	
2		14-5-4-19	44	
3		14-5-4-21	27	
4		14-5-4-24	91	
5		14-5-4-32	25	318
	40	**Total All Wards - 1982**		**2,066**

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1983 - New Blocks				
1		3-4-2-29	70	
2		3-4-3-28	86	156
1		6-6-8-40	104	104
1		7-7-4-19	32	
2		7-7-4-48	38	70
1		8-8-4-06	92	
2		8-8-4-24	70	162
1		9-8-3-49	43	
2		9-8-5-36	54	97
1		10-9-6-01	34	
2		10-9-6-28	57	91
1		11-5-1-69	70	70
1		14-5-3-47	52	52
	13	**Total All Wards - 1983**		**802**
1984 - New Blocks				
1		3-4-2-47	61	61
1		4-4-2-03	79	
2		4-4-3-13	145	224
1		6-6-6-32	37	
2		6-6-6-67	9	46
1		7-7-2-06	29	
2		7-7-2-14	8	
3		7-7-2-19	*	*
4		7-7-4-13	47	
5		7-7-4-34	38	122
1		8-7-5-34	64	
2		8-8-4-10	43	
3		8-8-4-22	51	
4		8-8-4-28	59	
5		8-8-4-29	120	
6		8-8-4-42	18	355

* Regent Park South Social Housing Project

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1		9-8-3-29	39	
2		9-8-3-33	98	
3		9-8-3-38	60	
4		9-9-4-48	18	
5		9-9-4-62	84	299
1		10-9-1-01	50	
2		10-9-1-24	23	
3		10-9-2-15	59	
4		10-9-6-02	58	
5		10-9-6-18	31	
6		10-9-6-21	60	281
1		14-5-3-46	114	114
	28	**Total All Wards - 1984**		**1,502**
1985 - New Blocks				
1		4-4-3-01	133	
2		4-4-3-23	33	
3		4-4-4-01	69	
4		4-4-4-45	58	293
1		6-6-8-14	1	
2		6-6-8-28	36	
3		6-6-8-29	39	76
1		5-6-5-26	19	
2		5-6-5-60	41	
3		5-6-5-13	2	62
1		7-7-1-50	11	
2		7-7-4-35	102	113
1		8-7-5-05	115	
2		8-7-5-43	20	
3		8-8-1-30	181	316
1		9-8-1-25	47	
2		9-8-5-16	37	
3		9-9-4-27	76	160
1		10-9-3-04	115	
2		10-9-6-05	147	
3		10-9-6-07	61	323

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1985 continued				
1		11-5-1-72	63	63
1		13-5-1-59	58	
2		13-5-2-20	63	
3		13-5-2-26	42	163
1		14-5-3-05	59	
2		14-5-3-32	48	
3		14-5-4-06	147	254
	28	**Total All Wards -1985**		**1,823**
1986 - New Blocks				
1		3-4-3-24	54	
2		3-4-3-34	27	81
1		4-4-4-42	115	115
1		5-6-5-04	510	
2		5-6-7-21	28	
3		5-6-8-59	3	541
1		6-6-6-66	22	22
1		7-7-4-16	44	44
1		8-7-5-35	49	
2		8-8-1-40	33	
3		8-8-4-15	66	
4		8-8-4-33	23	
5		8-8-4-63	29	
6		8-8-4-65	13	213
1		9-8-3-26	71	71
1		10-9-3-03	120	
2		10-9-3-52	55	
3		10-9-5-27	38	
4		10-9-6-16	61	274
1		11-5-1-65	66	66
1		12-5-3-60	37	37
	21	**Total All Wards - 1986**		**1,464**

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1987 - New Blocks				
1		3-4-2-39	9	9
1		4-4-2-01	60	
2		4-4-2-02	120	
3		4-4-3-04	34	
4		4-4-3-18	77	291
1		5-6-7-38	51	51
1		6-6-6-78	29	29
1		7-7-2-11	44	
2		7-7-4-04	32	76
1		8-7-3-34	41	41
1		9-8-3-03	32	
2		9-8-3-06	42	
3		9-8-5-28	54	
4		9-9-4-56	49	177
1		10-9-2-16	42	
2		10-9-3-34	90	132
	16	**Total All Wards - 1987**		**806**
1988 - New Blocks				
1		3-4-3-27	49	49
1		4-4-2-19	2	2
1		5-6-5-24	15	
2		5-6-7-51	19	34
1		6-6-6-62	-	-
1		7-7-4-05	43	
2		7-7-4-07	65	
3		7-7-4-12	16	124
1		8-7-1-16	58	
2		8-7-3-30	53	111
1		10-9-5-42	1	
2		10-9-5-44	34	35
	12	**Total All Wards - 1988**		355

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Ward, Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1989 - New Blocks				
1		5-6-6-48	-	-
1		8-8-4-26	56	56
1		10-9-5-29	15	15
	3 Total All Wards - 1989			**71**
1990 - New Blocks				
1		9-9-4-35	35	35
	1 Total All Wards - 1990			**35**